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ABSTRACT

Based on a review of the literature and ongoing research, this four-part monograph provides a composite profile of the enrollment and financial status of the nation's community colleges. After introductory material describing research methodology, Part I analyzes community college enrollment by sex, examines the increase in the number of adult students, and discusses the relative participation of full- and part-time students. Part II discusses prospective student enrollment behavior and educational needs based on needs assessment survey reports and econometric models designed to identify, through regression analysis, enrollment influences. Reasons for attending a community college as opposed to other post-secondary institutions are discussed, as are the problems involved in using surveys and modeling for predicting enrollment. Part III examines financial aid at community colleges and discusses the difficulties of defining and measuring an institution's "fair share," the dearth of empirical data on the distribution of financial aid to community college students, and the management of financial aid at the colleges. Finally, Part IV reviews the history of community college finance and examines current fiscal problems, criteria for assessing community college financial systems, tuition policies, community service funding patterns, and the impact of tax limitations. Data tables and an extensive bibliography are included. (JP)

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COMMUNITY COLLEGE STUDENTS, COSTS AND FINANCES: A REVIEW OF RESEARCH LITERATURE

By

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September 1980

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All implications and conclusions in this report are those of the authors and do not necessarily represent the positions of the National Institute of Education or of the Education Commission of the States. Any errors in the report are solely the responsibility of the authors.

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INTRODUCTION

The scope of community college finance covers a broad number of issues about community college students, programs, tuition and aid policies and other financing policies as well as interactions among these dimensions. Consequently, a review of the research literature and on-going research is a large understanding simply because of the breadth of coverage involved. To keep the task within reasonable limits, key subjects were identified as of particular interest to NIE in examining the effects of tuition and student financial aid policies on community colleges and prospective students.

Four topics were identified for review and a separate chapter in this report covers each of the topics. The first chapter deals with the characteristics of community college students. One of the factors that distinguishes community colleges from other postsecondary education institutions is their appeal to nontraditional students--adults, minorities, women, and low income and less educated people. This chapter discusses the problem of defining the relevant student population and provides estimates of the numbers of students attending community colleges and their demographic characteristics and discusses the sources of information about the characteristics of community college students.

The second topic is that of prospective student enrollment behavior and educational needs. There are two distinct parts to this chapter. The first part presents the more salient findings drawn from a large number of needs assessment survey reports and

contains a critical review of the design of surveys conducted by community colleges. The second part discusses some of the differences between modeling community college choice decisions and choice decisions for higher education in general and discusses the small number of studies that have focused on community colleges.

The question of whether community colleges receive their fair share of student financial aid is the third subject of the review, about which the least research has been done. Much of the discussion is rhetoric and even where data are available and used, there are several important value judgments that are not unanimously agreed upon and continue to prevent resolution of the issue.

The fourth subject, community college finance, is the largest and is the subject about which the most has been written--in both the literature and in this report. Institutions, states, and academic researchers have written voluminously on the concepts of community college finance, the effects of different funding patterns on enrollments, quality of education and institutional autonomy, and evaluative criteria of community college finance systems. Chapter IV summarizes the main results of research in these areas.

The last chapter contains a brief summary and identifies issues that should be important research topics in the coming years for community colleges.

The search of the literature was extensive and covered much more material than is referenced in this report. Choosing key

words and terms describing the topics of interest, such as "community college," "nontraditional," "adult," "financial aid," "revenue," and so forth, we made a computer search of all material included in the ERIC system for which the key words and terms were major descriptors. The search produced over 900 references for the period from 1973 through 1979. Based upon reading abstracts of all the references, we obtained some 300 to 400 of the references. Many were not included because they presented unsubstantiated opinions, were rhetorical, gave too institutional specific material, presented information similar to information given in more recent publications, or gave information that was not as relevant to the topics selected for the review as was inferred from the title or abstract.

In addition to the search of the ERIC system, individual researchers and administrators working in these areas or likely to be aware of research efforts in these areas were contacted and asked to call our attention to any work that they may have done or knew about which has not been published or distributed widely. Letters requesting information of materials on the selected topics for the review were sent to three groups of people. One was the membership of the Council of Universities and Colleges, a group of about 75 college and university teaching staff members or students whose interests include community or junior college education. A second group was the State Higher Education Executive Officers (SHEEO), and the third group was the State Directors of Community and Junior Colleges (NCSDCJC). In addition, word of mouth information received from many people was extensive and was

valuable in identifying current research.

I. CHARACTERISTICS OF COMMUNITY COLLEGE STUDENTS

A determination of the characteristics of students at community colleges depends largely upon how the community college student population is defind. The most common description of the community college student is that he or she is more adult--older and with more family and employment responsibilities--than the conventional collegiate-aged youth. Yet the extent to which this and other characteristics are observed depends upon the population referred to. It might include first-time or returning students in higher education or to enrollments in credit, noncredit, and community service programs, or on-campus or off-campus programs.

While there are dozens of institutional reports giving basic demographic information about their students, the specific mission of a community college may reflect many special conditions unique to the institution or the community it serves. For this reason, the information in this section is drawn primarily from a few national level sources.

The most complete count of students is the annual tabulation through the Higher Education General Information System (HEGIS) by the National Center for Education Statistics (NCES) of all institutions of higher education. The data include number of enrollments by race, sex, full-time or part-time status, and the level of instruction (e.g., first-time undergraduate, second-year undergraduate, first-year graduate) for different institutional sectors. Basic enrollment statistics are published annually by

NCES, and more detailed descriptions of the student population can be obtained upon request or may be accessed directly through computer tapes that NCES makes publicly available. Some of the information is presented in the following tables.

Table 1 shows that 3,873,690 students in the 50 states and the District of Columbia, or about 34 percent of all students enrolled in community colleges in the fall of 1978. While 49.9 percent of all students were women, 52.9 percent of community college students were women. Furthermore, 40.8 percent of all students attended part-time, while 62.9 percent of community college students attended part-time. Community colleges also enroll a larger proportion of ethnic minority students than other insitutions. Row 1 of Table 2 indicates that a little more than one in five full-time students attend a community college but that over half of all part-time students attend a community college. Row 2 shows that ethnic minorities, whether male or female, part-time or full-time, attend community colleges in a greater proportion than is true for all students. Row 3 shows the same pattern for blacks, the largest minority group, except for part-time black women, who attend community colleges in about the same proportion as all part-time women students.

These data, however, may not represent the actual enrollment situation in community colleges for two reasons. First, the HEGIS data are of uneven quality and reliability due to varying efforts among institutions submitting the data to insure accuracy. Data on enrollments are generally considered more accurate than institutional financial data reported through HEGIS, but the

Table 1

PERCENTAGE AND NUMBER OF STUDENTS IN INSTITUTIONS OF HIGHER EDUCATION AND IN COMMUNITY COLLEGES BY SEX AND PART-TIME AND FULL-TIME STATUS, FALL 1978

	Men		Women		
	Full-Time	Part-Time	Full-Time	Part-Time	Total
Number in all institutions	3,527,506 (31.3)	2,113,492 (18.8)	3,140,151 (27.9)	2,478,943 (22.0)	11,260,092 (100.0)
Number in community colleges	738,620 (19.1)	1,083,466 (28.0)	700,593 (18.1)	1,351,011 (34.9)	3,873,690 (100.0)

Source: NCES, Fall Enrollment in Higher Education, 1978. Washington, D.C.: Government Printing Office, 1979, 44 and 52.

Table 2

PERCENTAGE ENROLLMENT IN PUBLIC TWO-YEAR INSTITUTIONS BY SEX AND PART-TIME AND FULL-TIME STATUS FOR ETHNIC GROUPINGS, FALL 1978

	Men		Women	
	Full-Time	Part-Time	Full-Time	Part-Time
Percentage of all students attending community colleges	20.8	51.2	22.1	54.3
Percentage of minority students attending community colleges	26.6	56.5	27.6	57.2
Percentage of black students attending community colleges	29.5	57.7	28.7	54.7

Source: NCES, Fall Enrollment in Higher Education, 1978. Washington, D.C.: Government Printing Office, 1979, 182-3.

American Association of Community and Junior Colleges (AACJC) reported enrollment of 4,147,174 for the 50 states for October 1978 while NCES reported 3,873,690. Both estimates were limited to credit enrollment. The 7.1 percent difference could be due to measurement error or a different universe of institutions. Although NCES and AACJC include only public two-year institutions, the range of institutional organization and governance is so broad that some judgment had to be made in deciding to classify some institutions as community colleges (referred to interchangeably as public two-year institutions).

The second reason for a disparity between reported enrollment and actual enrollment is that credit enrollment is only a portion of community college total enrollment. Enrollment in noncredit and community service programs is a major segment of community colleges and a much larger component for community colleges than for other institutions. Of the 10.2 million noncredit course registrations (each course registration equals one registration) made in 1977-78, 5.2 million of them were in two-year institutions (NCES, [1979]).

However, it is difficult to talk about noncredit programs as a single entity because of the diversity of course content and attendance status of students. Some noncredit courses may be similar in curricular content to credit courses while others are unique, often designed for personal enrichment. Overall, about 25 percent of community college noncredit registrations is in occupational specialties and another 20 percent is in business and management or health professions (NCES, [1979]). Some noncredit

courses may meet very infrequently while others may have classes as regularly as credit courses. In some states, certain noncredit courses receive state funding; in other states no state support is given to noncredit courses regardless of similarity of course content to credit courses that are state supported.

The classification of courses as credit or noncredit and the taxonomy of community services offered by community colleges is at best ambiguous. For example, California distinguishes credit from noncredit courses in the community colleges on the following basis (State of California, 1980b, 1-2).

Credit	Noncredit
1. Approved by local district governing board and approved by officials and faculty as being of appropriate rigor.	1. Approved by local district governing board.
2. Taught by a credentialed teacher.	2. Taught by a credentialed teacher.
3. Teaches toward a set of instructional goals.	3. Uses a course outline.
4. Measures student performance and provides for official student evaluation.	4. Standards set appropriately, given students eligible to attend.
5. Enrolls only students who meet prerequisites.	5. Open admissions to all 18 years of age or older and those who can benefit from the experience.

The distinction between instructional services and community services is that community services are complementary to instructional services. They include "all noncredit instruction classes and cultural and recreational activities exclusive of those defined under Instructional Services.... Community service classes and activities are characterized by the fact that they

serve more personal than public interests" (State of California, 1980a, 6).

While estimates of the number of students in noncredit programs and community service programs and statistics describing the characteristics of these students are for the most part lacking, it is questionable, especially for community service programs, whether any aggregate description would be meaningful because of the breadth of programs and represented interests in those programs, and a detailed analysis would be too voluminous. Even the number of people participating in community services is difficult to assess. In fact, many of them should not be considered "students" in that they may qualify as a participant solely because they, for example, attend a public lecture or are one-time members of an audience for a campus held function. Clearly, the upper limit to the number of people participating in these activities approximates the size of the total community.

Information on noncredit enrollments in community colleges is much less ambiguous although data are limited. The number of noncredit enrollments approximates the same general magnitude as the number of credit enrollments. In 1977-78, community college noncredit enrollment was slightly over 3 million while credit enrollment was a little over 4.1 million. The bulk of recent community college growth is attributable to the noncredit sector. Between 1976 and 1977, community college credit enrollment grew 4.4 percent, but noncredit enrollment grew 8.7 percent (AACJC, 1979). The dominance of noncredit adult and continuing education by community colleges, however, may be diminishing. Between

1967-68 and 1975-76, the community college noncredit adult and continuing education enrollment grew by 463 percent, and the growth rate for all institutions was 57 percent (including a negative growth rate for public universities and private two-year institutions). Between 1975 and 1977, however, noncredit enrollment growth for all institutions was 14.9 percent and 25.8 percent for community colleges (NCES, [1979]), less than twice the overall average.

The reasons for this discussion of the number of enrollments in noncredit programs are two. First, since most data that are available are on credit enrollments, it is easy to discuss credit enrollments and to forget that they consitute only a portion of the total number of community college students. Second, although we do not know much about the characteristics and behavior of students enrolling in noncredit programs, it is probably not appropriate to generalize from what we know of credit enrollments. The more popular noncredit programs are in the areas of home economics, developmental activities, art, civic and community affairs, and vocational technologies, but little is known of the ambitions of the students taking those classes or of the financial, educational, or social conditions under which students will enroll in those programs. (Further information on this topic is given in the next chapter on education needs assessment.)

The best that can be done under the circumstances is to recognize the magnitude of the sector. Perhaps tempering the importance given to this sector is the fact that most students taking noncredit courses enroll on a very limited basis. Conversion of noncredit enrollments to full-time equivalents (FTE)

may be as high as 20 to 1 or higher. Consequently, they constitute a much smaller portion of the FTE enrollment than they do of headcount enrollment. Second, many noncredit programs are financially self-supporting, that is, student fees cover instructional costs (although there are exceptions and the number of exceptions may increase in the 1980s). Thus, many of the noncredit programs, and especially community service activities, are viewed as being "outside" the conventional college programs. However, many people would argue that it is exactly these "unconventional" programs that are so important to the character and essence of a community college.

Enrollment and demographic characteristics of community college students have been documented primarily in a patch-quilt fashion through a number of individual institutional surveys. Few studies are massive enough or broad enough in scope to be used for national representation. The national norm survey of first-time, full-time freshmen by the Cooperative Institutional Research Program (CIRP) in conjunction with the American Council on Education indicates the generally recognized lower socioeconomic status and lesser academic preparation in high school of community college students than other students, but the CIRP sample includes a disproportionately small percentage of community college students and completely omits part-time students and continuing or returning students--groups of students very important to community colleges.

A study that addresses more directly the demographic and enrollment characteristics of adult students is by Solomon,

Gordon, and Ochsner (1979). In the report, some 51,000 first-time, full-time adults (over 21 years of age) included in the CIRP norm sample plus approximately another 121,000 adult freshmen, who were not included in the norm sample, from 1966 to 1978, constitute the data for the report. The inclusion of non-norm adults provides information on some students who attend part-time or are returning students. The purpose of the study was to examine the characteristics and needs of adults in postsecondary education. However, most of the data apply to all postsecondary education; not just to community colleges.

A study by Hyde (1980c) examined the age of community college students and educational and other demographic characteristics associated with age and compared the results with those of students attending in other institutional sectors. The data are drawn from the annual Current Population Survey (CPS) of the Bureau of the Census and the October Supplement which includes information on college enrollment. The survey is of 70,000 households representing a national sample. A separate record is made for each adult. The sample includes a full range of students--part-time and full-time, students of all ages, and first-time and returning and continuing students. Most of the data in the Hyde report are drawn from the 1978 survey with more limited information from the 1973 CPS for purposes of comparison. The samples are limited to credit enrollment. The following information is drawn from that report and provides data on "adult" characteristics of students, their demographic characteristics, and the nature and degree of their educational involvement.

Adult Characteristics

An adult might be defined, for example, simply as anyone 18 years old or older, but age is not necessarily the best or only criterion that should be used. In fact, age is often considered as a proxy for other attributes of adults such as employment and family obligations and the reduced amount of free time or financial resources available for pursuing other interests. Both age and other adult characteristics are discussed.

Age

The median age of community college students in 1978 was 22.6 years while it was 21.5 and 21.4 for students at public four-year and private four-year institutions, respectively. These age differences, however, are not based on comparable situations. Most of the students at community colleges are enrolled in their first two years of college. Four-year institutions, however, have upper division and graduate students, and, other things equal, must be older than freshmen and sophmores. When only lower division students are considered, the difference in median age becomes more apparent. The median age for lower division community college students is 21.6, and it is 18.9 and 18.8 for lower division students at public four-year and private four-year institutions, respectively. Most of the difference is due to age differences among full-time students. For part-time, lower division students, the median ages for students at the three types of institutions are 26.4, 26.0 and 26.4. It suggests that community colleges particularly attract people, such as military veterans and others, who have delayed their matriculation of

degree programs.

Age disparities become greater among institutional sectors when the mean is used instead of the median, due to the right hand skew of the age distribution. The mean age of the lower division, community college student is 25.4 and 20.8 for students at both public four-year and private four-year institutions.

The increase over time in the number of adult students in community colleges is indicated in Table 3. In 1973, 44.0 percent of community college students were of conventional college age, that is, 18 or 19 years old. By 1978, the percentage had dropped to 29.5 percent. Among lower division students, the percentage is also higher for 1973 than for 1978, and, as expected, many more full-time students are of the conventional collegiate age than part-time students.

Other Adult Characteristics

It is natural with age that other life changes occur. Individuals become heads of households, become married (and thus gain the opportunity of becoming widowed or divorced) and become employed. All of these things happen more frequently and at a younger age among community college students than other students, whether referring to all students or just lower division students, and this appears to be a stable condition. It was true in 1978 as well as in 1973. The frequency of some of these events and activities is a natural function of age, but, within the lower age groups, the frequencies are greater among community college students. For example, 4.5 percent of community college students

Table 3

PERCENTAGE OF COMMUNITY COLLEGE STUDENTS
OF CONVENTIONAL COLLEGIATE AGE

	1978	1973
Percentage of students less than 20 years old	29.5 percent	44.0 percent
Percentage of lower division, full-time students less than 20 years old	59.6	65.2
Percentage of lower division, part-time students less than 20 years old	14.6	18.4

Source: William, Hyde, The Age of Community College Students and Related Educational and Demographic Characteristics. Denver, Colorado: Education Commission of the States, 1980.

less than 20 years old are heads of households while only 3.3 percent of the public four-year and 1.5 percent of private four-year students are heads of households. The relative frequencies also exist for those between 20 and 25 years of age. For subsequent ages, distinctions diminish (or exist but are unreliable because of small numbers of observations for older students).

Demographic Characteristics

In 1973, more men than women went to college, but women did not attend community colleges any more frequently than other institutions. In 1978, however, women attended community colleges moe frequently (52.9 percent) than public four-year institutions (48.8 percent) or private four-year institutions (48.2 pecent). Blacks also attend community colleges more frequently than other institutions, but among lower division blacks the situation is different. Black, full-time, lower division students enroll in community colleges more frequently (14.4 percent) than in public four-year (12.5 percent) or private four-year (7.0 percent) institutions, but black, part-time, lower division students are less likely to enroll in community colleges (10.1 pecent) than public four-year (11.4 percent) or private four-year (12.0 pecent) institutions.

The income of community college students and their families is also lower than for students attending other institutions. Among community college students, 44.6 percent have annual incomes below $15,000. For students attending public four-year

institutions the percentage is 37.8, and it is 31.1 percent for students attending private four-year institutions.

Enrollment Status

The degree of student participation, measured by part-time and full-time status, has declined over the years. In 1973, 59 percent of community college students and 62 percent of lower division community college students attended full-time. By 1978 only 43 percent of all community college students were attending full-time and only 48 percent of lower division community college students attended full-time. The trend toward part-time status occurred at other institutions as well, but the initial percentage of part-time students for these institutions was much smaller than for community colleges.

Among part-time students, it appears that on average community college students carry a heavier course load than part-time students in other institutions. Slightly less than half the number of part-time community college students takes one to five credit hours of instruction while slightly over half of part-time students in other institutions take the same number of credit hours of instruction. These results were similar for all students as well as for only lower division students. The interpretation of this information is not clear but might reflect the effort of community college students who can not afford to attend full-time, because of employment or other responsibilities, to attend on as full a basis as possible in hopes of completing their program without unnecessary delay. The difference in course

loads could also reflect a difference in rigor of programs. If community college courses are less academically demanding, a student would be able to take more credit hours of instruction than a student attending a four-year institution without investing any more time. These reasons, however, are only speculative.

II. ENROLLMENT BEHAVIOR AND EDUCATIONAL NEEDS

Assessments of the conditions under which individuals might enroll in higher education take one of two forms. One is to model individual enrollment behavior and to test that model with data, allowing the researcher to associate statistically changes in factors, hypothesized to influence enrollment, with enrollment changes. This econometric approach is based on the revealed preferences of individuals; that is, an estimate of the likely enrollment behavior of an individual is interpolated or extrapolated from actual, observed behavior of other individuals.

The second method is to estimate enrollment likelihood from survey information collected from individuals questioned about their interests in education. These two approaches are quite different methodologically, and each approach has its shortcomings and will be discussed later.

While both approaches are common tools of marketing, the application of either approach to community colleges is more difficult than the application to other educational sectors because diversity of students, programs, reasons for taking courses, and obstacles to attending are much greater for students who attend community colleges than for more conventional collegiate students attending other institutions. Community colleges, once serving to provide primarily either transfer programs or vocational education now provide many continuing education and community service activities that constitute a large

and growing additional function of community colleges. Individuals are often interested in these activities for reasons quite different from the reasons of students enrolling in the conventional transfer or vocational programs. Consequently, modeling and estimating enrollment by either method is more difficult for community colleges than for other institutional sectors.

Survey Studies

The literature contains dozens of surveys of people's interests in education to obtain information on how the community college may serve better its community. Virtually all of the surveys included in this review were conducted at the institutional level. State-level needs assessment studies have been undertaken as well, but they do not focus specifically on community colleges. Some of the community college surveys are targeted for current students, prospective students, adults, senior citizens, or employers. The primary purpose of the community colleges in undertaking the surveys is to gain information which will (1) identify educational interests in, and need for, new programs, (2) identify barriers to attendance, or (3) identify competing institutions and the factors most related to competition or determine the demand for a proposed new institution.

Making generalizations about community college program needs from survey results of a handful of institutions can be risky business. Institutions have different missions and programs, and

they serve different populations. Quality and cost of programs and competition from other institutions vary widely. Too many factors differ among community colleges to allow comparable interpretation of survey results across institutions. Nevertheless, some trends are evident.

Educational Needs

Community college surveys of the educational interests and goals of their students document common knowledge regarding their educational preferences. The primary goal is to prepare to transfer to a four-year institution or to obtain a degree. Obtaining job skills or improving job skills is a second major educational goal. Depending largely upon the socioeconomic status of the student body and the curricular orientation of the community college, the proportion of students planning to transfer or interested in acquiring job skills varies generally from a fourth to two-thirds of the students.

Nationally, the emphasis on arts and science degrees and other formal awards below the baccalaureate has declined steadily during the 1970s. In 1971, 54.5 percent of the less than baccalaureate degrees and awards were granted in the arts and sciences; in 1976 the percentage was 42.5. During the same period, the percentage of degrees and awards in technological fields increased, especially in the area of public service (Cumberland County College, 1978). The shift in program interests is due in large part to the growth of nontraditional students who are more interested in occupational programs and other subjects than the conventional collegiate students.

A third key objective is personal enrichment, although this is a more popular educational goal among (1) older students than among the conventional collegiate-aged students and (2) nonstudents expressing an interest in education than among actual students. See, for example, Weiser (1977, 17). Personal enrichment courses are also more prevalent among noncredit programs, but the conclusion should not be drawn that the only, or even primary, reason for enrolling in noncredit or community service programs is for personal enrichment. The percentage of enrollments in noncredit vocational programs may be substantial. In one survey of the reasons for enrolling in community service courses, the modal response (42.1 percent) was to improve the student's chances of employment. Furthering the student's cultural and social development was the second most popular reason (Nickens, 1977, 11-19).

In fact, it is the nonconventional students taking community education courses that are responsible for the continuing growth among community colleges. Between 1977 and 1978, credit enrollment in community and junior colleges was virtually unchanged (decreased by 0.1 percent) while enrollment in community education increased by 7.9 percent (American Association of Community and Junior Colleges, 1978 and 1979). The growth of these programs reflects the needs of many students for less traditional learning opportunity -- less formally structured courses, more flexible class schedules and more convenient delivery mechanisms. Black Hawk College in Illinois provides a good example of how an alternative study program involving

self-paced, take-home cassette instructions was established and accepted as part of the standard credit curriculum (Stevens, 1978, 33-39). In many instances, enrollment in noncredit or community service courses is the first introduction for many students to community colleges and may lead to subsequent credit enrollment (See for example, Hamer and Boulton, 1978).

The prospects for continued growth are probably greater for community colleges than for most other institutions because the community colleges have been innovative in reaching new student markets; they serve nontrational students extensively and have been responsive to their particular educational and education-related needs. Furthermore, many prospective students are interested in nontraditional delivery systems but desire credit for their work, and the community colleges have made more progress than other institutions in providing credit for nontraditional types of learning (Hutchins, 1975). The growth rate of community college enrollments in continuing education and community service programs is, however, likely to slow because of greater competition by other institutions financially pressed by declining numbers of conventional collegiate-aged students and by public sentiment supportive of alternative educational institutions, such as proprietary schools, publicly funded vocational education centers, and private sector training programs (McIntyre, 1976).

The question of which institutions will dominate the provision of courses offered for personal enrichment will depend upon how the programs are financed and the charges to the

students. Surveys of nonstudent adults show that among those interested in further education the most popular reason for continuing their education is for personal satisfaction (Hutchins, 1977; Maki et al, 1974; Response Analysis Corp., 1979). Yet it is the adults in courses that are offered for personal enrichment that appear to be most sensitive to funding or price changes (discussed more extensively in the next section). This is particularly the case with older adult students. Senior citizens are primarily interested in health and welfare courses such as estate planning, health and nutrition for senior citizens, and psychological aspects of aging, and these programs are eliminated first when a state cuts its education budget (Charles, R., 1979). Furthermore, 22 states waive tuition for senior citizens in regular courses, but with budgetary constraints they may be forced to impose tuition. If charged tuition, many older students would probably elect not to attend (Butcher, 1980). Although senior citizens constitute a small fraction of the total student population, there are claims that, because of longer life expectancies and more leisure time, older adults have growing interests in educational programs. It is obvious how easily their interests will translate into enrollments. During the 1980s, public sentiment and the economic disposition of government may not be sufficient financially to support ambitious education curricula.

A few surveys of local and regional employers have been undertaken to determine their needs for skilled labor. Employers usually state that there are certain skills that they need and

that can be acquired in educational institutions, but those needs vary from industry to industry as well as from time to time depending on the economic prosperity of the region. It appears that about one in five employers are willing to defray tuition charges for employees taking job related training, but many employers prefer to do their own training on the job (Ferguson, et al, 1975). In all cases, the results of the surveys of employers are specific to the institution and cannot be generalized to other institutions.

Reasons for Attending or for Not Attending

Large portions of the population when asked will state that they have an interest in furthering their education although they are not currently enrolled and do not have any immediate plans of enrolling. The disparity between projections of often tens of thousands of residents of an area expressing an interest in additional education and actual enrollment levels is often used as evidence of the need for an institution to do more to accommodate its educationally needy, unserved residents. In order to determine the best way for an institution to respond to these prospective students, many community colleges attempt to identify the reasons students choose or do not choose their institution. The main findings follow regarding the reasons of people to attend, not to attend, or to attend elsewhere.

The most popular reasons cited by students for attending a community college and cited by nonstudents as factors that would be important in attending are proximity to home and low costs. These two factors quite consistently rank first and second in

importance and across surveys constitute on average about three-fourths of the reasons given for choosing community colleges. Other reasons include enjoyment of attending, amount of work required, and provision of special courses. Survey respondents also cite other services as important for attending, such as child care and financial aid. Yet, the number of those who use the child care facilities and those who apply for financial aid is substantially lower than the number stating that those factors are important in attending (Medsker, et al, 1977).

Information about preferences for scheduling classes is frequently included in needs assessment surveys although few respondents indicate that time of day or week limits their attending. It may be that community colleges have sufficiently varied schedules that classes are in fact available when students want them. As expected, results of surveys show that prospective adult students want courses offered in the evenings more frequently than conventional youths, as do part-time students and vocational students.

A substantial minority of adults also express an interest in nontraditional delivery mechanisms for instruction such as work that can be done at home or by correspondence. These adults are also those who often state that job and family responsibilities prevent them from enrolling. A notable exception to this prevalent response is that of senior citizens. The purpose of attending a community college is not limited strictly to educational development (State of Florida, 1976, 3-4); older adults may be particularly interested in the social and personal

development that attendance at a community college offers. Senior citizens who have an interest in taking an educational course are not interested in staying at home (Charles, R., 1979, 12).

Many needs assessment surveys also ask individuals what prevents them from attending, and the popular replies are that they do not have enough time or that the course or program costs too much. Other reasons include lack of transportation, inconvenient class location or schedule, personal reasons, hesitancy to attend school full time, home and job responsibilities, lack of child care, and preference for on-the-job training to gain skills (Grady, 1979; Hutchins, 1978; Redemer, 1976; Response Analysis Corp., 1979; San Diego Community College, 1975).

A small number of needs assessment surveys inquire about the amount individuals are willing to pay to take courses. The survey results indicate that many people who state an interest in obtaining more education are not willing to pay much to enroll. In one survey, only 15 percent of the adult respondents stated a willingness to pay $100 or more per course. Three-fourths of the adults thought that $50 or less per course was a reasonable charge. Expectedly, those with higher incomes (above $20,000) or with a college degree were more willing to pay larger amounts than those with lower incomes or without a college degree, and students in noncredit programs were slightly more price sensitive (i.e., consider a charge of $50 or less per course as reasonable) than either students enrolled for credit or other individuals interested but not enrolled (Response Analysis Corp., 1978, 64-5).

Two other surveys (with the results given below) show that about one in five adults are willing to pay $100 or more per course but that about 60 percent have a limit to the amount that they are willing to pay of $50 or a lesser amount. In one of the surveys, a fourth of the respondents were not willing to pay the equivalent of the tuition for a three-hour course (Hutchins, 1975, 27, and Russell, 1977, 46).

Hutchins Survey		Russell Survey	
Amount Willing to Pay	Percent of Respondents	Amount Willing to Pay	Percent of Respondents
$0	19.4%	$0	8.1%
up to $50	37.6	$25	26.6
up to $100	20.4	$25-$50	25.7
more than $100	more than 20	$50-$100	14.0
		$100-$200	7.7
		$200 or more	10.4

Obviously, the initial, large number of individuals estimated to have an interest in obtaining more education declines considerably when student charges are considered. Estimates of the number of individuals considering community college courses must be adjusted downward again when interest in educational programs in other institutions is considered.

Even though proximity to home is one of the main reasons given by students choosing community colleges, proximity to a community college is also given as a reason for attending some other institution rather than the nearby community college, that is, some people prefer to attend away from home (Wenckowski, 1978, 14). Students choosing other institutions over the community college also state that the community college is too small, is not

a four-year institution, does not offer the desired programs or have the academic reputation or quality of programs of the institution they attend (Wenckowski, 1978; Seegmiller, 1975; Redemer, 1976), and some individuals prefer acquiring their education and skills on the job rather than in the formal setting of an education institution (San Diego Community College, 1975).

State of the Art of Needs Assessments

The state of the art of needs assessments is fairly primitive. As they are currently designed, a needs assessment survey can provide an institution at best with a rough measure of the likely response it might receive to certain offerings or schedules, but the surveys are not designed well enough nor the implementation thorough enough to estimate enrollment levels.

The survey designs are flawed in several ways. First, the very nature of a questionnaire which asks the respondent to give answers for which he or she has no accountability produces overestimates of the amount of interest the respondent has in the service about which he or she is being questioned. Respondents are influenced by what they think the interviewer wants to hear; respondents also prefer to appear to be in agreement with the interviewer and consequently are more apt to give an affirmative than a negative answer. Futhermore, when a respondent is asked if he or she would be interested in having more educational opportunities available at their local community college, few people are inclined to say no.

The respondent may also give an answer which is perceived as protecting his or her potential interests. If a person is asked

how much they think the student charge should be, the respondent may think that a liberal estimate might be considered as support for high tuition or fees. Individuals are reluctant to express the actual amount they are willing to pay for services and generally will understate the amount that they are willing to pay.

The hypothetical nature of needs assessment questions is unavoidable; however, more information about respondents' preferences could be obtained by asking questions involving choices about the conditions under which the respondent might enroll (see, for example, Hyde, 1980b). While this approach is still flawed, in that respondents may disguise their true preferences in the responses they give, the affirmative answer inclination is avoided.

A second shortcoming is the omission of tuition and fee or cost information from surveys. Virtually all institutions charge tuition or fees and the structure of the tuition and fee schedules is a major policy issue at nearly all institutions. Inclusion of such an important component in a needs assessment seems necessary. There is certainly a large difference between the number of people who are likely to enroll in a course that is free and in one that has a $100 student charge. One possible explanation for the omission of such questions in most surveys may be that the institutions undertaking the surveys want to expand their curricula and seek favorable evidence of the need for providing additional educational services. Omitting such cost information from the survey and structuring the survey loosely provides responses that can be interpreted more favorably than might occur

if the survey were structured to measure more precisely the magnitude and type of interest for education courses and educational services.

The sampling designs of the surveys often fail to include a large enough number of individuals to estimate reliably the likely response of particular groups of people for specific types of programs. Furthermore, in studies involving the larger samples, the data that are collected are not analyzed as extensively as they could be. The distribution of answers to each question is given and occasionally the distribution is divided by key demographic or enrollment characteristics such as sex, race, student or nonstudent status, and part-time or full-time status of students, but these limited crosstabulations overlook many dimensions of the prospective interests of the population in educational programs. For example, both the types of courses in which people express interest and the amount of tuition they are willing to pay range widely, but no information is given about the course interests of those willing to pay the most or of those interested only in free courses. The information could be easily extracted from survey data. Another example of the underutilization of survey data is the frequently asked survey question about the use that would be made of child care facilities by prospective students. Obviously, the primary group of users is mothers with young children, although they as a group are not separated from other respondents for examining their educational needs and program and scheduling preferences. In a similar vein, studies that identify the reasons of prospective community college

students attending other institutions do not make distinctions of curricular interests among survey respondents.

The structure of survey questions and the options available for reply are important and can affect the responses obtained. Few individuals, when asked if they are interested in having available additional educational opportunities, will say that they are not interested, even though they may not be particularly interested. This response tendency is the result of the perception that education is a "good thing"; a person would feel foolish to admit that he or she is not interested. Efforts to hide true dispositions lead respondents into giving bogus reasons, such as lack of time or poor scheduling, for not being able to enroll. Inconsistencies can be found throughout surveys. For example, when respondents in one survey were asked their opinion of the convenience of the time that the community college scheduled courses, 59 percent thought that it was excellent, and 38 percent thought that it was fair. Only 3 percent thought that it was poor. Yet, nearly one-third of the respondents said that time of the class was an obstacle to their enrolling (Lauth and Zabek, 1978, 6 and 9).

This apparent inconsistency partly reflects the different perspectives a respondent may take. When asked for an opinion of some service in the abstract, a respondent is more likely to answer in terms of what he or she thinks people in general might want, but when asked directly about his or her own involvment the answer reflects more personal reasons. Numerous occurrences of this type of response were found in the surveys. To illustrate,

respondents generally supported the development of extracurricular or sport activities at community colleges although most respondents were not interested themselves in community college extracurricular activities or sports. Similarly, a larger percentage of respondents supported the establishment of child care centers by community colleges than the percentage of respondents who said they would use the facilities.

In sum, the results of needs assessment surveys must be interpreted and used cautiously. The way in which surveys are often designed, the hypothetical nature of the questions, and the psychological behavior and perspective of respondents all tend to indicate greater than actual need of or interest in educational programs and services. Unless highly structured and specifically structured, an education needs assessment can only provide general, not very meaningful guidelines for program development.

A final comment on the needs assessments is that while they can be useful, if properly designed, for identifying specific educational needs, such as pinpointing educational programs that can be used for preparing skilled labor for employers, much of the planning for adult education and coordination of programs among institutions and institutional sectors that should occur, requires that needs assessment studies be undertaken at a level that encompasses more than an individual institution.

Determinants of Enrollment

A number of studies of enrollment demand for higher education have been undertaken in the last ten years, and there has also

been a number of reviews of those studies. The person interested in this literature is referred to Cohn and Morgan (1978), Hyde (1978), Jackson and Weathersby (1975), McPherson (1978), and Weinschrott (1977). The purpose here is to focus on demand for community college enrollment and the ways in which design and methodological problems and research findings differ between higher education in general and community colleges in particular.

One theoretical problem perplexing to all higher education enrollment demand analysis is understanding the decision-making framework of an individual contemplating continuing his or her education. The decision-making behavior of the individual is not well understood, and empirically testable models of decision behavior have often been shaped by limitations of statistical capabilities. Public policy has also relied upon classifications that may be more convenient than behaviorally accurate for discussing policy objectives and achievements. A prime example of this propensity is the way in which access and choice are discussed--with access referring to the binary behavior of "attend or not attend" and choice referring to the type of attendance for those who do attend. In actuality a high school senior, or any other person, faces a very large number of options that include many education and noneducation opportunities. Each option could be assigned, on the basis of a wealth of information about a person's interests, disposition, resources, and available opportunities, a probability of being exercised by the individual. The set of probabilities is not likely to be the same for any two people. Of course, the ability of researchers to identify all of

an individual's options and to determine the probability of exercising each option is quite limited.

Researchers have modeled enrollment decisions using a limited number of determinants and have justified the use of a small number of explanatory variables on the grounds that (1) the importance of many factors can be statistically captured through the use of certain key variables for which information is available and (2) many options in a person's choice set have probabilities near zero and can be eliminated without introducing significant bias.

Research by Radner and Miller (1975) which involved conditional logit analysis and Barnes et al (1975) which involved estimating a series of dichotomous logit functions representing sequential choice options placed particular emphasis on modeling the choices available to prospective students and explicitly identified different institutional sectors within their models. However, it is questionable whether the model that Barnes used represents the actual decision making process, and for both studies the empirical estimation is costly and complicated.

Modeling the Choice of Community College Attendance

Estimating conventional enrollments at community colleges and not for higher education in general may involve a specification of choices which can be more easily accomplished, depending upon what assumptions are made regarding viable options available to prospective students.

Options may be arranged in a hierarchical structure such that

each subsequent option in the hierarchy requires a greater educational commitment. While the number of options in the hierarchy is large, it is convenient to consider only a few key options. One assumption is that employment without taking any further schooling is an option at the lower end of the hierarchy; attending a two-year institution represents a higher position in the hierarchy, and attending a four-year institution occupies an even higher hierarchical step. Of course, this sequencing of options is not rigidly structured. Some students who enter a two-year institution may plan to transfer to a four-year institution and thus may have the same level of initial commitment as the student who enters a four-year institution from the outset. Furthermore, there may not be complete agreement among individuals on the particular sequencing of options within the hierarchy. Nevertheless, it is a reasonable assumption to make for examining enrollment decisions.

A second assumption is that the probabilities of options preceding and following the option with the greatest probability of being exercised increase and decrease monotonically. For instance, if an individual is most likely to work after high school without taking any further schooling, the probability of attending a community college is greater than the probability of any other option requiring a greater educational commitment than the community college option. Similarly, a person who is almost sure to attend a four-year university may have a small probability of attending a community college, but the probability of going to work directly would be even smaller.

Under this situation, it is an empirical question whether the best alternative for a community college student is not attending at all or attending some other institution. With an hierarchical structure of options, the most viable choice for an individual can be viewed as choosing either between attending a community college or not attending at all or between attending a community college or attending some other institution. Which choice the student faces depends upon the relative attractiveness of the options to the individual. One the one hand, if the community college option for an individual lies closer to the four-year option than to the noneducation option, estimates of the importance of variables affecting those who are deciding between attending a community college and not attending at all will be similar to estimates of the variables' influence calculated in an "attend/not attend" option. On the other hand, if the community college option lies closer to the noneducation option, the importance of variables affecting those who are deciding between attending a community college and not attending at all will be dissimilar to estimates of the importance of the variables' influence in an "attend/not attend" model.

This line of reasoning was implied in the analyses by Hyde (1979a) and by Berne (1980). Hyde made three parallel regression analyses. The first regression was made employing all individuals in the sample, using the conventional attend/not attend dependent variable. The second regression was made using only individuals who either attended a community college or did not attend at all. The third regression was made on only those who attended either a

two-year or four-year institution.

The results indicate that socioeconomic status (SES), specifically father's level of educational attainment, has a significant, positive effect on the likelihood of attending a four-year institution when choosing between a two-year and four-year institution, but virtually no effect on attendance at a community college when deciding between attending a community college and not attending at all. Among high school preparation variables, enrollment in a college preparatory curriculum positively affects the likelihood of selecting the four-year institution but has little effect in the community college/not attend option. The college going rate of a high school senior's classmates, however, while important in the overall attend/not attend analysis reflects primarily the importance of the college going rate for those who are deciding between attending a community college and not attending at all.

The knowledge that an individual has about student financial aid programs also positively affects the likelihood of attending for those considering attending a community college or not attending at all; its effect in the four-year/two-year institution choice is positive but not significant.

In the study by Berne the same hierarchy of options is implied. A sample of community college applicants were asked what they would do if the nearby community college did not exist. Responses were divided into those who would not continue their education and those who would attend elsewhere. Of the variables used by Berne, SES and high school curriculum were the same as

variables used by Hyde and the coefficients for these two variables were similar in the two studies for both the "attend two-year/not attend" and "attend two-year/attend other" options. The conventional wisdom that SES has a strong positive impact on the likelihood of attending college must be modified--its primary effect is for attendance at four-year institutions.

Differences in Factors Affecting Demand for Community Colleges and Other Higher Education Institutions

A major reservation of extrapolating findings from demand studies of higher education in general to the context of demand for community colleges is that the students are quite different, and they may respond differently to certain factors. Nearly all studies of higher education enrollment demand are based on samples of conventional collegiate youths although community colleges have a large number of adult students. The characteristics, educational interests and preferences for type of program and delivery mechanisms of adults and conventional collegiate youths are different (Solomon, Gordon, and Ochsner, 1979, and Hyde, 1980b,c). Consequently, the influence of factors affecting enrollments at community colleges may be different than it is for students at other institutions. Bishop and VanDyk in an analysis of adult students shows them to be sensitive to cost variations, although no replication of the analysis was undertaken with conventional youths to allow a strict comparison (Bishop and VanDyk, 1977).

Berne (1980) calculated price elasticities that showed that a

$100 change in the amount that a student pays to attend a community college (either due to a change in tuition or student financial aid) changes the probability of attending the community college by three to five percentage points for those choosing between a community college and work but only one to two percentage points for those choosing between attending a community college and some other institution. This again confirms the proposition that the marginal student, the student who is deciding between continuing school and working, is more sensitive to cost considerations than other prospective students. With a growing diversity of educational interests, programs, schedules, and delivery mechanisms estimation of likely enrollment changes in community colleges becomes more difficult; yet, continuation of conventional measures becomes increasingly inappropriate.

Many community colleges were established in response to a public policy of providing access to higher education by locating community colleges geographically near prospective students. Some investigation has been made of the extent to which greater participation has occurred as a result of the proliferation of community colleges. The establishment of a community college where none formerly existed may induce individuals who otherwise would not enroll to attend, or it may result in students attending the community college who would otherwise attend elsewhere (Sulock, 1976).

The evidence is not extensive on the degree to which community colleges are substitutes or complements for other educational institutions, and the relationship may be changing

over time. Studies on this subject employ data from 1972 or from earlier years. Sandell (1976), using data from the National Longitudinal Survey of High School Seniors concludes that most of the students attending neighboring community colleges would have attended other institutions if the community colleges had not existed. However, the effect is not uniform across all groups of students. The presence of community colleges significantly increased college attendance among white women and black men while having no significant effect on other groups of students.

The complexity of the interactions between type of student and types of institutions available to the prospective student in determining college attendance is covered in considerable detail by Anderson, Bowman, and Tinto (1972). They conclude that proximity of a community college will induce only limited numbers of new, traditional students. High ability students of any income and high income students are likely to attend elsewhere; net increases in college attendance rates are most likely to occur among lower ability, lower-to-middle income students.

The research that examines most explicitly the question of the substitutability and complementarity of the relationship between community colleges and other institutions is a study by Frey and Alexander (1976). Using time series data on the enrollment ratios of four-year colleges to two-year colleges, their research indicates that two-year colleges are generally substitutes for four-year colleges when two-year colleges have small enrollments but become more complementary as enrollment grows. Their notion is that two-year colleges have a stable

"core" of students who will attend some institution under any condition. Enrollments increase as new students are recruited from the community, reducing the proportion of students who are substituting community college attendance for attendance at some other institution. Their work indicates that the degree of complementarity increased from 1956 to 1971. If their theory is valid, it is plausible that more recent data would support the trend of increasing complementarity. In other words, it appears that the four-year institutions haved maintained their traditional market share, but the two-year institutions (essentially the community colleges) have branched into new student markets.

Finally, it appears that policy variables, on average, may have greater influence upon students at community colleges than at other institutions because of the different characteristics of students that generally attend community colleges. Community college students on average have lower socioeconomic status than other students, and virtually all studies that examine the varying effect of policy variables on students of different socioeconomic status show that lower income students are more sensitive to changes in cost and student financial aid than less disadvantaged students. Similarly, adults seem more sensitive to cost considerations, and they also attend community colleges more than other institutions. Consequently, while nonpolicy variables, such as SES, may be important in one's decision to attend a four-year institution, they appear to be less important for those considering a community college, and at the same time policy variables have a greater impact on those individuals likely to

attend a community college than on those inclined to attend a four-year institution.

III. STUDENT FINANCIAL AID AND COMMUNITY COLLEGES

How much or what proportion of costs a student should pay to attend an institution of higher education has been a policy concern sporadically for several decades. More recently, with the advent of massive funding of student financial aid programs, policy makers have been interested in knowing how equitably student financial aid is distributed among students of different incomes and among students attending institutional sectors where the cost of attendance varies substantially (as do the expenditures per student, but differences between expenditures and student costs are a different dimension of the equity issue). While different groups of institutions--the privates, the publics, the universities, and community colleges--are all interested in assuring that they receive their fair share of aid, the issue has been raised frequently with respect to community colleges perhaps because of their dissimilarity with other institutional sectors, such as their often different funding mechanisms, the lower educational and general expenditure level per student, and their evolution from, and in many cases continued attachment to, secondary education. The purpose here is to review the issues and evidence surrounding the question of a fair distribution of student financial aid for community colleges.

Problems of Defining and Measuring "Fair Share"

Perhaps the main reason that the issue of "fair share" remains ambiguous and unresolved is that the term is so value laden. Some of the issues are quite well known. Nelson (Nelson, S., 1980) has pointed to the fact that much of the debate is over determining ability to pay--how much of a student's or parents' wealth and income should be available for meeting educational costs--and how much of the total educational cost should be reflected in the designated price (that is, what portion of the total cost should be paid by society and what portion by the student).

There are other less well known factors or perspectives of the popular issues that deserve elaboration. One is that a determination of how much aid a student should receive or how much a student should pay to attend rests on two distinct concepts. One draws upon the Puritan work ethic in that a student is expected to make a certain financial commitment to the cost of his or her education often in the form of work earnings and loan proceeds. Although estimates vary as to how much the "self-help" component should be, it is usually considered a fixed amount without regard to the cost of attendance.

The second concept is drawn directly from economic theory of resource allocation and results in the idea that a student should pay some proportion of his or her costs; thus, it is a variable cost. In practice the two concepts are merged in financial aid determination, and results of equity measurements can be turned topsy turvey if the information in one instance is presented in

percentage terms and in another instance in dollar amounts.

Another factor that confounds the determination of the equity of the distribution of aid is that the composition of aid packages differs, and not all types of aid are of the same value. The value of a grant is taken at its face value because there is no financial obligation attached to its receipt. Loans and work opportunities, however, do carry obligations. Loans carry an obligation to repay and work earnings require a provision of labor. Furthermore, the rationale for awarding different types of aid differs. A (need based) grant is made to compensate for a lack of ability to pay; loans and work opportunities are given to allow a student to meet the self-help expectation. The relative weights that should be given to loan proceeds and work earnings to equate them to grant dollars is unclear.

Some people argue that loans, work and grants should all be treated at face value because they all serve equally to reduce the out of pocket cost that a student must pay to matriculate. While this is true, not everyone considers only the net price, exclusive of the incurred obligations, in deciding to enroll. For example, two to three times as many people are willing to accept a grant of $2,000 as a loan of $2,000 to meet educational costs (Hyde, 1980b). This basic unresolvable problem of combining apples and oranges makes impossible the use of any single measure for accurately determining whether the amount of financial aid that goes to community college students is fair.

The issue of the equity of the distribution of student financial aid in community colleges is often assessed in the

context of the education costs to the student. Disagreement over what constitutes the community college student costs is a source of disagreement over the fairness of the distribution of aid. State and federal student financial aid per student as a percentage of tuition and fees is 73 percent for students at community colleges, 38 percent for students at public four-year institutions, and 18 percent for students at private institutions (Nelson, S., 1980). However, aid is often awarded for educational expenses other than tuition and fees. In fact, nontuition costs are greater than tuition and fee costs, but there is some uncertainty about what nontuition costs should be included. The College Scholarship Service (CSS) includes room and board, transportation, books and supplies and personal expenses. Nelson (Nelson, S., 1980) argues that certain portions of board, transportation and personal expenses would be incurred anyway and should not be considered as costs incurred in attending college. Nelson's estimates of nontuition costs of going to college are about one half of the estimates given by CSS.

Furthermore, the validity of the figures is in doubt. Budget figures reported by CCS are compiled from estimates submitted by institutions, and estimates vary widely among institutions. Furthermore, Hyde (1980a) has shown that transportation costs for commuting students are at least 70 percent higher than transportation costs used by CSS in their calculation of student budgets. Since a much larger percentage of community college students commute than students attending other institutions, the community college budget is underestimated relative to budgets for

students attending other institutions.

In addition to the transportation costs, commuting requires spending time commuting and if the value of commuting time is included in the commuting costs then the estimate increases by several hundred additional dollars. Policy makers have been reluctant to include foregone earnings in estimates of costs borne by the student, and for cross sectoral comparisons the omission of foregone earnings affects the results uniformly if it is assumed that time per credit hour spent in class and studying is the same in all sectors. Commuting time, however, is not uniformly distributed among sectors; most of it is borne by community college students. Consequently, the student budget should be increased for commuting students, or it should be acknowledged that the typical commuting student budget includes more foregone income or other activities than the resident student budget.

Empirical Results of the Equitable Distribution of Student Financial Aid to Community Colleges

The amount of research that has been done on the issue of the equity of the distribution of student financial aid among institutional sectors is extremely small. The first empirical ivestigation was made by Gladieux (1975) in which he found that a disproportionately small amount of campus-based aid program funds (SEOG, CSW and NDSL) went to community colleges. The results from another study (Nelson, S., 1980), using more recent data from 1976, 1977 and 1978 agree with Gladieux's findings. The outcome, however, can not be generalized to other aid programs. Nelson shows that the community college share of Basic Grants funds

relative to enrollment is slightly greater than for public four-year institutions but that the community college share of state aid funds is less than half that for public four-year institutions. Two other measures of utilization of financial aid by community colleges--student aid relative to cost of attendance and awarding of aid by tuition level and family income--also shows that community colleges fare best under the Basic Grant program and worst under state aid programs.

If progress toward achievement by community colleges of their "fair share" of aid means distributing aid so that net price (cost of attendance minus aid) is equalized across institutional sectors, then community colleges do quite well. When all forms of aid are considered, including veterans' benefits and social security benefits which go dominantly to low income students and merit awards which go largely to higher income students as well as funds from other aid programs, financial aid appears to eliminate much of the initial variation in cost among institutional sectors. The difference in the average, low-income student budgets for those attending public four-year and two-year institutions is about $660, but the difference in net price for these two groups of students is only $290 (Augenblick and Hyde, 1979, 64-65). In terms of what percentage of costs the student actually pays, the difference is eliminated for the student attending either a pubic two-year or four-year institution. On average the proportion of the budget that is borne by the student, excluding his or her parents' contribution plus grants, is the same in either case (Hyde, 1979b, 34).

Institutional Management of Student Financial Aid

The charge has been made that community college financial aid offices are poorly managed, understaffed, and run by inexperienced personnel and that these factors are the cause of community college students not obtaining more campus-based financial aid (Russo, 1976; Nelson, J., 1976, 15). However, a national survey of student financial aid administrators undertaken in 1974 by William Bushaw showed that although the community college financial aid officer has less experience in financial aid administration and a smaller staff, they were no less educated, no younger, and were better paid than financial aid officers in other institutions of similar size (Nelson, S., 1980). A few states have also undertaken assessments of their financial aid administration personnel (Missouri, 1977; Morse, 1978; Oregon, 1979), but their findings do not contradict results of studies conducted on the national level although one report indicated possible unavoidable overawarding of aid to community college students (Morse, 1979).

The differences among community colleges and other institutions in the characteristics of the financial aid personnel do not seem sufficient to argue that they are the basis for underutilization of campus-based aid programs by community colleges. In fact, no single factor appears to be responsible for a diminished amount of campus-based aid going to students attending community colleges (Gladieux, 1975; Nelson, S., 1980). While measured inequities may be considered too small to warrant

major overhauling of education policies, presumably capable of eliminating the inequities, more attention should be given to determining if greater inequities may exist for students who have been excluded historically from research studies of student financial aid.

In summary, insufficient data make it difficult to determine whether community colleges receive their fair share of student financial aid (although data from the Applied Management Sciences study of student financial aid may remedy this deficiency). Nevertheless, even with complete data, resolution of the question is not possible without agreement on how to define key concepts of cost, financial aid value, and ability to pay and to measure them. The fragmentary data that do exist suggest that while the community colleges could do better, they are by no means doing poorly. In fact, upon reviewing the data, one might wonder whether policy makers have taken adequate steps to achieve the desired educational and social results.

The fact that community colleges do better under the Basic Grants program than under the campus-based programs and better under the campus-based programs than under state aid programs is not necessarily a cause for concern. Programs were designed to serve different purposes just as community colleges and other institutions are meant to have different missions. On the one hand, community colleges are meant to provide open access or at least more access than most other institutions, and Basic Grants are meant to be the cornerstone of aid programs to provide access. On the other hand, state aid programs are commonly established

with the intention of providing students with a choice of attending more expensive institutions. The pattern of aid distribution among institutional sectors is consistent with these policy objectives.

What perhaps is a concern and an issue that is largely overlooked in, or omitted from, research on this topic is the fact that much of the data are drawn from samples of conventional collegiate students. In some instances part-time students, older, returning students and students enrolled in noncredit programs are excluded from the universe of students sampled. The failure to include these students is a serious oversight with respect to studying community colleges because community colleges draw heavily upon those students. Much of the apparent concern for giving greater attention to the plight of the community college student may stem from those groups of community college students that do not fit into the conventional collegiate mold and are often ineligible for many aid programs.

IV. THE FINANCING OF COMMUNITY COLLEGES

Development of Approaches to Community College Finance

The financing of community colleges has been a central topic of discussion throughout their development. Essentially, three distinct periods characterize that development: the origination and stabilization of the community college concept, the expansion of the institutions, and the decline in the availability of resources. The literature concerning community college finance has been very different during these periods, exhortative in the initial period, descriptive in the second, and increasingly rational but plaintive in the third.

The concept of the community college developed out of precedents relating to elementary/secondary education and postsecondary education (Garms, 1977). Given those hybrid origins it is not unexpected that community college finance mechanisms have reflected approaches used in both of those education sectors. The original purpose of the junior college, developed at the turn of the century by William Rainey Harper, was to relieve higher education institutions of the burden of providing less specialized lower division education. Harper encouraged the idea of extending the responsibility of public schools for two years beyond high school so that higher education's resources could be used more efficiently in direct preparation for and completion of graduate school (Breneman and Nelson, forthcoming). He was able to

implement this approach in several communities surrounding the University of Chicago, leading to the development of the first junior colleges, although the university never relinguished its lower division programs (Wattenbarger and Cage, 1974). Following this lead, California authorized the establishment of locally sponsored junior colleges in 1907; over the next few years, in that state and in others programs that essentially extended high school in preparation for the upper division of higher education developed in municipalitites around the country. Under these circumstances the emerging community colleges were funded by local tax revenues with little or no reliance on state funds or tuition receipts, which was characteristic of elementary/secondary school finance at the time. At the same time there existed many privately sponsored junior colleges supported chiefly by tuition and fee revenues.

As late as 1929, Texas prohibited the use of state funds to support community colleges (Wattenbarger and Cage, 1974). Although the average amount of state support received by community colleges was 3 percent of all revenues at that time, tuition and fees had become a significant source of support, about 49 percent of all revenues, in those states where its use was permitted (Green, 1929). The Depression appears to have stimulated the growth of publicly supported two-year colleges. In 1921-22 there were 207 junior colleges, about a third of which were publicly sponsored. By 1938-39, there were 575 junior colleges of which nearly half were publicly sponsored. About 70 percent of the students enrolled in junior colleges attended pubic institutions

at that time (Garms, 1977).

The expansion period of community colleges, from the 1940s to the 1970s was characterized by an increased reliance on state funds and a wide diversity in the approaches taken by the states in the provision of such funds and the use of tuition and fee revenues.

Much of the work of community college finance analysts has been directed at examining these different financial arrangements among the states. In 1956 Medsker studied these arrangements and noted that three patterns emerged by which states funded the current operating expenses of community colleges. First, funds could be appropriated to the colleges or to an agency responsible for their operation directly from the legislature. Second, a formula could be established under which the state paid a fixed amount per unit of "task," such as the FTE student. A variation of this method, in states where a local district contribution was required, included the use of foundation level guarantees to equalize spending among community college districts, at least at a minimum level. Under the third pattern, the state paid a fixed proportion of the costs per task unit. Despite these primary patterns, the proportion of revenues provided by the state, local districts and students varied widely among the states. Medsker concluded from his examination that the financing of public junior colleges was "in a state of confusion, since, as institutions, these colleges did not conform to the established patterns of either the institutions above them or those below them" (1956, p. 248).

Two years after Medsker's study, Martorana sought to discover the relationship between financing systems and organizational patterns for the community college through a survey of 247 of the nearly 400 institutions. He found that institutions that were operated as extensions of the public elementary/secondary school system had the highest levels of local support while state aid remained, on average, less than one-third of all revenues. Institutions that were state controlled received state aid, on average, in excess of 50 percent. Local junior college districts tended to obtain approximately equal proportions of revenue from state and local sources. Tuition remained low as a proportion of all revenues under each of these systems (Martorana, 1958).

Medsker improved upon his earlier study in his 1960 analysis of California's system of financing its 63 public junior colleges. Going beyond basic description, Medsker assessed the strengths and weaknesses of the state's funding system. Under the system, state aid of $125 per student in average daily attendance was guaranteed to local districts while the state guaranteed an additional $285 through a foundation program that required a local contribution of 35 cents per $100 of local assessed valuation. Since students were permitted to attend almost any institution, with some restrictions, even if they resided in an area that was not a legally difined district, a complex system of inter-district charges was included as well as a means of taxing nondistrict areas in which any student lived. Medsker felt that the level of local contribution, nearly 60 percent of all operating expenditures on average, was too high, particularly since the

institutions enrolled nearly three-fourths of all full-time lower division students. He believed that the institutions were impaired in their claims for support because, at the local level, they enrolled fewer students than elementary/secondary schools while, at the state level, they lacked the prestige of a four-year institution of higher education (Medsker, 1960).

A 1966 study by Thornton confirmed Medsker's fears concerning the relationship between government appropriations to community colleges and their expenditure levels. He documented the problems that resulted when costs increased at the same time that state revenues were constrained and limits on tuition were mandated by states. Where local tax burdens would no longer sustain expenditures, Thornton expected that increases in fees and new federal aid would only provide temporary relief and he called for substantial increases in state support (Thornton, 1966).

In 1968 Arney found that state support was over 50 percent of all revenues while local support was about 21 percent of all revenues provided to community colleges in 42 states with community colleges. Of those states, 41 provided some state support to community colleges. He noted that during the previous decade 15 states had moved away from local support entirely (Arney, 1969).

Lombardi traced the changes in tuition levels between 1929 and 1968 and found an increased reliance on that source of revenues over the period. In 1929, 46 percent of all community colleges imposed no tuition while 53 percent of the community colleges had a tuition level below $100 per student. In 1960, 36

percent of all community colleges had no tuition or fees; by 1968 this proportion had been reduced by half as only 18 percent of all community colleges had no tuition or fees revenues. Using definitions of moderate tuition ($100 to $299) and high tuition ($300 to $499), Lombardi found that while the percentage of community colleges charging moderate tuition levels remained just less than 50 percent from 1960 to 1968, the percentage charging high tuitions rose from 8 percent to 20 percent during the period (Lombardi, 1976). These figures were not adjusted to reflect the impact of inflation during the period.

Generally, then, between the early part of this century and 1970 the financing pattern for community colleges changed significantly; the reliance on local funds had been reduced with a concomitant increase in state funding and the use of tuition and fees had become commonplace at levels that were considered relatively high by community college supporters. These changes indicate general trends although they mask the fact that wide variations in the methods of providing state support and attitudes toward tuition existed among the states.

Problems in Financing Community Colleges in the 1970s

New problems relating to the financing of community colleges emerged in the 1970s as the institutions continued their expansion. Essentially these problems were caused by an unanticipated demand for community college education, a shift in the way that students participate in postsecondary education, constraints on the availability of funds, an unwillingness to

raise tuition levels when local and state support declined, and an insensitivity to special circumstances of particular community colleges. While the problem of financing in the formative years of community colleges was the ability to generate any funding, the problem in the 1970s was the ability to generate sufficient funding. Developing new sources of revenues beyond local, state and federal governments, students, and gifts and contracts was not attempted except in isolated cases.

The most obvious lament of community college supporters in the 1970s was a lack of state support (Wattenbarger and Cage, 1974, and Alfred, 1978). Given the changes that had taken place earlier, community colleges had come to depend on state support despite the anticipated problems of state interference in locally controlled institutions (Charles, S., 1978). Local support was viewed as constrained by dormancy in property values and an inability to raise tax rates. Raising tuition levels was viewed simply as a fundamental infringement on the mission of the community college: to provide barrier free educational opportunities. The decline in state support was documented in state after state. In Iowa, the state had simply not distributed as much support per student as it had guaranteed, in part because the number of students enrolling exceeded estimates and no mechanisms existed to adjust state appropriations (Moench, 1980). In New York, state support was the largest single component of community college revenues but in the 1970s it had not kept pace with rising costs, particularly those caused by inflation. In that state, between 1973-74 and 1977-78, state aid per student

increased by 6.0 percent annually but expenditures per student increased by 6.5 percent annually. During the last year of that period, expenditures had increased nearly 70 percent more rapidly than revenues (Larsson, 1979). In Washington, community colleges received only 80 percent of what was required in 1976 to keep up with inflation, based upon changes since 1970 (Mundt, 1976). Community colleges on Michigan, Ohio, Nevada and North Carolina also faced reductions in state spport in the 1970s (McGuire, 1978).

The increase in community college expenditures was viewed as being caused by forces outside the control of the institutions, including inflation, utility costs, and the cost of collective bargaining agreements, particularly the fringe benefit components of such agreements, negotiations for which were often completed at the state level and imposed on local districts. Many complaints were aired about the cost of providing programs mandated by the state, particularly when state support for such programs is not sufficient to meet expenditures (Wattenbarger and Cage, 1974). Increased competition between community colleges and other education sectors and social agencies was blamed as a cause of reduced state support (McGuire, 1978). Others have suggested, however, that funding of community colleges has kept up with such pressures better than in the case of other state supported services (California Postsecondary Education Commisson, 1977).

Some attention has been paid to problems caused by the particular method by which state support is distributed. Most state aid formulas are driven by the number of

full-time-equivalent (FTE) students enrolled, or projected to be enrolled. In many states there have been restrictions on what kinds of students qualified for state support or which programs were excluded from credit earned toward full-time equivalency. In California, restrictions were placed on state reimbursement for "defined" adults and in many other states restrictions on adults, non-traditional or part-time students or students in non-credit, avocational or other types of courses were limited. While these restrictions were designed to target limited state support to those students considered most eligible for support, they also reduced the availability of funds for students and programs considered nontraditional but essential to the functioning of the community college. The stress caused by limited state support and the flexible delivery systems, characteristic of social service agencies, preferred by community colleges escalated in the 1970s (California Postsecondary Education Commission, 1977).

Other problems have been cited in the methods of counting students. The ratio of full-time to part-time students changed at many community colleges as more students chose to attend on a part-time basis. Formulas that were sensitive only to FTE counts failed to consider the implications of providing services to more students even though the number of courses taken declined. Counseling, testing, evaluation, record keeping and other services were provided to individual students without regard to the number of classes in which they were enrolled (Armstrong et al, 1979). The ratio of contact hours to credit hours made by teachers at community colleges may be very different from other education

sectors and when teacher contracts are based on contact hours but state aid is based on credit hours, the community college is forced to choose between reducing contact hours or providing only those courses with a favorable ratio (Macomb County Community College, 1976). In Iowa, significant differences between vocational and other programs in the ratio of contact hours to credit hours were found and it was shown that the state formula was not properly reimbursing all community colleges for the costs of their vocational programs (Schorzmann, 1979).

One of the most sophisticated adjustments introduced into the formulas by which states provided aid to community colleges was the factor which sensitized state aid to program cost differences and which, in its ultimate use in Illinois, allowed the state to share differently in those costs, based on the relative importance of each program to the state (Warren et al, 1976). Normally this approach has been put into practice by determining the statewide average cost per student for particular programs and providing reimbursement based on that average figure. The advantages of this approach include a recognition of the substantial cost variations among programs and the support services provided by community colleges, the ability to identify other factors, such as regional economic conditions or economies of scale, for use in the formula, better management of limited resources, and improved comparisons among institutions. The disadvantages of this approach are that all costs are treated as if they varied with enrollment; it encourages homogeneity among community colleges; it may discourage or encourage enrollments in high cost programs

depending on the relationship between an institution's actual cost and the statewide average, and it may discourage either cost saving approaches in high cost programs or high cost innovations in relatively low cost programs (California Postsecondary Educationn Commission, 1977 and Moench, 1980). Given the state of the art of cost analysis, the value judgements inherent in allocating indirect costs, the inability to properly allocate fixed and variable costs or to calculate marginal costs, this approach may appear to be more rational than it is in practice.

In addition to these formula related concerns, other problems have been cited as a cause for difficulty in the provision of state support. States have not consistently provided funds for community service programs, which are considered by community colleges to be essential components of their programs but which are viewed as "self-supporting" by many states. A great deal of confusion surrounds the provision of state funds for vocational education, resulting in duplication of effort and an inefficient use of resources. Finally, state support for capital improvements has dwindled after initial funds were provided to build community colleges. New equipment has not been purchased and deferred maintenance has reached a crisis level in some institutions (Wattenbarger and Starnes, 1976).

Despite the problems that have arisen in the provision of state support, some states that relied almost completely on state support felt justified in doing so. States such as Colorado, with vast sparsely populated areas, relied on state support to assure the provision of community college services where alternatives to

such support would be difficult to generate. Virginia used a full state support system to deal with problems caused by the appropriate allocation of funds to individual institutions with special circumstances with which a formula could not deal. These advantages must be weighed not only against the problems cited above but also the degree of state control that characterizes a system that is almost totally state funded.

Criteria for Assessing Community College Finance Systems

Much of the early work in community college finance sought to persuade local and state policymakers of the need to initially provide any support and later to provide an increased level of support. As it was perceived that local taxes had been pushed to their limits, authors sought to find rationales for increasing state support, usually arguing that the benefits of increasing educational opportunities far outweighed the cost to the state. As has been described, however, a limit on state support also began to be reached as the numbers of students enrolling in community colleges burgeoned and the competition for state funds increased among other educational and social programs. Initially, debate continued over the types of students and types of programs for which the states would provide support but ultimately criteria for providing support to community colleges emerged and alternative systems of allocating support were assessed against these criteria. Most recently, approaches to community college finance that do not accept some of the "givens" of only a decade ago have routinely been examined, particularly as economists and

others outside of the community college movement, began to study community college finance.

The changes in these criteria can be seen clearly in comparing those of Arney, proposed in 1969, with those of Garms, proposed in 1977. Arney, after examining community college finance systems in 42 states, proposed the following.

1. The state should consider the community college level of education to be a part of the publicly supported system of education as evidenced by a state provision of support.
2. The state should provide equal educational opportunities to any individual who might benefit from a community college education.
3. The state should provide support for all programs offered by community colleges, including those for which credit is not offered.
4. A statewide system of community colleges should be encouraged by the provision of charge back systems.
5. Local support should be provided to community colleges.

Arney did not evaluate how well particular state community college finance systems met these criteria. However, the implication of these criteria is that community colleges should not be funded as if they were extensions of elementary/secondary schools, that the state should provide support for instructional and community service programs, and that local communities should contribute something to community college support in order to maintain some measure of control (Lausberg, 1972). The precise method by which state aid should be distributed was not made clear. However, the maintenance of low or no tuition, the distribution of state funds under an objective formula which provides the majority of support for community colleges, and the

provision of the remainder from local sources would maximize a state's community college finance structure against these criteria (Arney, 1969, Wattenbarger and Cage, 1974, Wattenbarger and Starnes, 1976, Wattenbarger, 1979).

Further refining these criteria in the 1970s, a number of writers focused their attention on the dynamics of state aid formulas, many of which were adopted to replace minimum foundation approaches, as used popularly in elementary/secondary education, or the allocation of a fixed dollar amount per student. The following were viewed as important contributors to expenditure differentials among community colleges that should be recognized in any state aid formula (Wattenbarger and Starnes, 1976).

1. Number of students enrolled, economies of scale.
2. Geographical location of campuses.
3. Status of development in terms of campus and programs.
4. Type of curricular program or distribution of enrollments among different disciplines.
5. Functions of the institution, including instruction, research, extension and public service, library and learning resources, student services, administration and plant operation.
6. Fixed and variable costs.

Wattenbarger and Starnes developed an approach based on cost analysis that would be sensitive to ten different cost areas. Such an approach, which requires detailed accounting procedures and cost analyses, is viewed as useful in requesting state support for a statewide community college system and in allocating funds, once received, to individual institutions. The implication of this approach, but one not suggested by Wattenbarger and Starnes, is that all institutions of postsecondary education could be

considered on the same footing and that only the decisions of state policymakers concerning the location of certain programs might differentiate the level of funding received, thus eliminating the problem that community colleges are viewed as offering low cost programs and thus receive lower state support. Under such an approach, however, all postsecondary institutions would need to be funded under a statutory formula. While in some states the use of a formula is made in allocating state support to public four-year institutions, the formula is often not statutory and there is room for negotiation. Despite the fact that in most states community colleges are considered to be postsecondary institutions, the statutory formula used to finance them continues to distinguish them from other postsecondary institutions.

One of the most comprehensive set of criteria developed to assess alternative community college funding systems was proposed by Garms. He, and a number others, have proposed broader criteria linked more explicitly to economists' concerns about equity and efficiency (Breneman and Nelson, forthcoming and Heinemann and Sussna, 1971). Garms argued that the following nine criteria should be used in evaluating community college finance systems (1977).

1. The elimination of barriers to attendance.
2. The stimulation to offer courses at community colleges not offered in other postsecondary institutions.
3. Responsiveness of institutions to community preferences.
4. The preservation of independent, nonpublic institutions.
5. The expansion of institutions within well-defined fiscal constraints.

6. The prevention of program duplication.

7. Promotion of institutional efficiency.

8. Inter-student equity, in terms of expenditures and tuition payments.

9. Inter-district equity, in terms of tax burdens.

Having established these criteria, Garms attempted to assess financing systems then in use, despite the fact that most of the criteria are difficult to define or to measure. Having judged that no finance system actually in use met all of the criteria well, Garms proposed what he considered to be the best alternative: a modified power-equalizing system under which community college districts would receive from the state a similar amount per capita, rather than per student, per unit of tax effort. An integral part of this approach was that tuition should be set at a level to furnish 50 percent of the current operating expenditures of institutions and the state would offset the burden of tuition to low-income students through a student financial aid program. One radical feature of this plan, the provision of funds on a per capita rather than a per student basis, was designed to eliminate the incentive, provided under most other plans, to expand community college enrollments at state expense, particularly under circumstances where the marginal cost to the institution was far less than the average amount of state support received by the institution.

One of the major emphases of Garms' approach was on equity for students, for public and private two-year institutions, and for community college districts. While others have generally

recognized student equity as an appropriate goal, achieving it through a recommended low tuition policy, inter-district equity has not always been a goal of community college finance systems; it was an implicit part of those systems under which the state provided for all or most of the costs of community colleges or of those systems using the minimum foundation approach, which guaranteed a fixed level of resources per student at a fixed tax rate. While there has been some debate about whether inter-district equity is an appropriate goal (Lausberg, 1972; Garms, 1977, 1980; Nelson, 1977; Breneman and Nelson, forthcoming, Wattenbarger, 1979; Augenblick, 1979; and Clark, 1980), evidence has shown that variations in expenditure levels and tax rates exist among community colleges in states that rely on local resources as a significant component of support (Cothran and Thompson, 1976, New Jersey Commission on Financing Postsecondary Education, 1977, Augenblick 1978, Kinawong, 1978, Clark, 1980). An expanded view of equity has also been proposed under which inter-student, inter-district, and inter-sectoral differences in expenditures and the net cost to students should be evaluated for all public institutions in a state, at least at the lower division level (Augenblick, 1978).

One of the newest criteria to enter into community college finance systems is a reflection of the anticipated decline in enrollments at the institutions. Many of the criteria discussed above were developed to respond to the expansion of community college enrollments so as to assure that adequate resources would be available while appropriately dividing responsibility for the

provision of those resources among states, localities, and students. Faced with declining enrollments, however, it has become necessary to cushion the impact of such declines in order to avoid disrupting service provisions (Alfred, 1978). Wattenbarger has proposed mechanisms to consider this problem (1979) and Illinois and California are two states that have discussed or implemented marginal cost approaches that deal with the problem (Board of Governors, California Community Colleges, 1979).

Other criteria are also emerging as community colleges deal with declining resources. An evaluation of numerous alternative funding approaches in Maryland was completed using the following criteria and others (Armstrong et al, 1979).

1. Potential stability of revenues with inflation and declining enrollment.
2. Potential for providing funds to special projects such as remedial education or education for the handicapped.
3. Potential benefit to financially troubled institutions.

While the self-serving nature of these criteria are obvious, they reflect a growing concern on the part of community college educators that the traditional broad criteria, including flexibility and accessibility need to be more carefully specified in light of changing environmental conditions. Under new approaches, the general criterion to judge one year's level of state support is whether it adequately reflects changed conditions from the previous year and not whether the procedure under which the allocation was made is appropriate. In California, for instance, three criteria have emerged (Board of Governors,

California Community Colleges, 1979).

1. Does this year's level of support consider inflationary increases over last year?

2. Does this year's level of support consider marginal changes in workload?

3. Does this year's level of support consider program changes either required by the state or rationally determined by the local community college district?

The concern about criteria, the broadening of them to reflect public finance concerns and not just the specific problems of commnity colleges, and the increasing specificity of criteria as problems emerge, is indicative of the more rational basis emerging for community college finance. Debates about community college finance systems in state legislatures are beginning to look like those that characterize elementary/secondary education, although whether that is an improvement is difficult to evaluate.

Tuition and Community College Finance

Perhaps no feature of community college funding systems has received more attention than tuition levels. Low or no-tuition has been a building block upon which the notion of the community college was developed and built, despite increasing recognition that the community college of the 1980s, the problems they face, and the environment in which they operate are very different from those of even a decade ago (Reid, 1977). The no-tuition policy evolved from a philosophical position that the first two years of postsecondary education ought to be financed in the same way as the twelve years of elementary/secondary education. That is, local schools should provide such education at no cost to students

and expenditures should be financed with state and local funding. This notion received support thirty years ago from the President's Commission on Higher Education, which advocated tuition free lower division education at all public institutions (1947).

Earlier, tuition had been advocated at public junior colleges in recognition of the fact that those institutions competed with other institutions, both public and private, that offered similar programs for which tuition was charged (Seashore, 1940). Given the fact that no federal funds were made available to implement the recommendations of the 1947 President's Commission, tuition levels that had been established at some community colleges were maintained and increased. In fact, in some states, such as New York, tuition was an essential component of the finance system.

It has been claimed that the reason why tuition is accepted in community colleges, where it is unacceptable in elementary/secondary schools, is due to the lack of a compulsory attendance requirement. Diekhoff, a critic of community colleges, advocated higher tuition charges for students who could afford to pay them (1950). Since that time, despite the constant advocacy that a no-tuition policy was the only way to assure open access to all, the fiscal realities of community colleges have led to the imposition of tuition in states where it has been prohibited and the continual increasing of tuition as inflation and reduced state and local support have changed the dynamics of community college finance. California remains the only state where tuition at community colleges is prohibited (although substantial fees are charged), a position that continues to be held despite the impact

of the tax limitation movement in that state (Board of Governors, California Community Colleges, 1979).

Lombardi has pointed out that a no-tuition policy has been more of a dream than a reality during the entire period of community college development. Even the dream was only held by educational leaders and theorists and not by community college administrators (Lombardi, 1976). His review of numerous studies of tuition levels showed that between 1951 and 1975, the percentage of community colleges not charging tuition dropped from 39 percent to 6 percent while the percentage charging over $300 per student rose from 3 percent to 44 percent (Lombardi, 1976). He concludes that the extensive discussion on the merits of low tuition, including advocacy by such prestigious groups as the Carnegie Commission on Higher Education has had the effect, at best, of keeping tuition levels lower than they might otherwise have been. "Much more influential in shaping tuition policy have been various economic and social forces" (Lombardi, 1976, p. 15). Lombardi also states that to some extent, no-tuition has been a myth in that it applied to only certain well defined groups within the community college, primarily full-time students who were residents of the community college districts. For others, even in California, such as part-time students, older students, or non-residents, tuition or extensive fees have been charged. In addition, states with high tuition levels among community colleges also provide the highest levels of support per student, a benefit to the student that may outweigh the cost incurred.

Assuming that some level of tuition will be charged, deciding

the appropriate amount is an important issue. One study has shown that resident tuition and required fee levels for 1979-80 varied from $0 to $800, with an average of $405 (Council for Postsecondary Education, 1980). One of the most popular positions about how to establish levels is to set it as a proportion either of total costs or, more typically, instructional costs. The Carnegie Commission popularized the notion that students should provide approximately one-third of the expenditures for higher education although such expenditures included costs other than instruction (Carnegie Commission on Higher Education, 1973) and although it specifically recommended a low tuition policy for community colleges (Carnegie Council on Policy Studies in Higher Education, 1975). Some states have specified the student share of institutional costs at the one third level, such as New York, while many have established target percentage. In 1975, tuition in community colleges was generally between 15 and 20 percent of institutional expenditures (Lombardi, 1976). Garms recommended that tuition at community colleges be set at 50 percent of costs in order to maintain the viability of private institutions (1977). If tuition is set as a percentage of institutional cost the implication is that tuition will rise as rapidly as costs rise which is viewed as an appropriate way to bring pressure on community college administrators to keep expenditures from increasing (California Postsecondary Education Commission, 1977 Supplement). Research in Maryland suggests that this is precisely what has happened (Armstrong, et al, 1979).

In most discussions of tuition some reference is made to the

distribution of benefits received; the assumption is that the allocation of costs can be made between public and private sources based upon the public and private benefits received. It has generally proven difficult to describe such benefits, much less quantify them and the theory remains a general guide rather than a practical tool. The use of this approach for community colleges is particularly difficult since such a diversity of programs is offered. However, accepting the general thrust of the theory has allowed some people to think about differentiating tuition. A general outcome of this approach is that certain courses offered by community colleges may be viewed as providing all benefits to students, such as recreation courses, while others may provide primarily social benefits, such as courses for the elderly, which allows, for those offerings, a rationale for charging students either the full average cost of the program or no tuition.

However, this does not solve the problem of establishing tuition levels for courses with joint benefits. An approach to this problem has been to charge a similar proportion of program costs, recognizing that program costs will vary widely and assuming that the benefits received are generally related to the level of "input" resources. One study of this approach, at a private four-year institution, suggests that price discrimination would result in shifts in enrollment but that the net effect on total institutional revenue would be negligible (Spitz, 1979). Another study, in Washington, was undertaken to determine if the cost differentiated approach was appropriate for all public institutions. In that case it was shown that while the costs of

lower division programs in public four-year institutions and those of community college academic programs were similar, tuition was actually lower at community colleges (Johnson, 1979). This suggests that the rationale for taking this approach may not be as strong as historical precedents in treating different sectors of postsecondary education differently. Further, if the differential cost approach is used, both of these studies indicate the necessity to carefully specify costs. It should be noted that the American Association of Community and Junior Colleges went on record in 1973 as being against charging higher tuition levels in programs with higher costs. This position was taken in order to avoid the possibility that low income students would be prohibited from enrolling in high cost programs (American Association of Community and Junior Colleges, 1974).

No matter how tuition rates are determined, an important concern to community college educators has been the impact of tuition on the college going behavior of students and, equally important, the impact of the interaction between tuition levels and numbers of students enrolling on institutional revenues. Studies have shown that the imposition of tuition or an increase in tuition may adversely affect the numbers of students enrolling, particularly low-income or part-time students. Similarly, reductions in tuition have been shown to be associated with increased enrollments (Brossman, 1977). Early studies suggested that superior students responded negatively to the imposition of relatively high tuition levels at community colleges, perhaps because such students were more apt to choose four-year

institutions if the price of two- and four-year institutions were similar (Wattenbarger and Cage, 1974). Community college advocates generally point to studies showing absolutely that a given dollar increase in tuition results in a given percentage decline in students (National Commission on Financing Postsecondary Education, 1973) or that low income students are the most likely not to enroll when tuition levels rise (Davis and Johns, 1973).

The availability of student aid, which has increased dramatically since 1972, does not provide comfort to many community college educators since the level of need greatly exceeds the amount of aid available, students may not have sufficient information to seek aid, and many students attending community colleges are not eligible to receive aid due to their part-time status, age or other characteristics (Nelson and Breneman, 1979). In some states, however, more control is available over student aid since it is distributed through the issuance of tuition waivers, which can be distributed by institutions based on whatever characteristics of students they choose (Florida Division of Community Colleges, 1979).

California presents an interesting case to examine the likely impacts of a tuition increase combined with the availability of student financial aid. A model developed by the California Postsecondary Education Commission attempted to simulate the impact of various increases in tuition, from a no tuition level, on the numbers of students attending community colleges, the characteristics of students, and the revenues available to

institutions. Using the model to test the impact of a tuition increase at the community colleges is somewhat more tenuous than using it for public four-year institutions since the parameters used in the model for response elasticities were derived from studies in which tuition in fact increased from one level to another and not in which tuition was imposed fo the first time. Nevertheless, the model indicates that if community college tuition and university tuitions were increased from $0 to $100, there would be a decrease in enrollments of approximately 5 percent. The decline would be most severe for high and low income students taking between 6 and 12 units and for high income full-time students. These figures take into consideration increased student aid awards available from the state. California's community colleges would reap, under these circumstances, an $86 million gross increase in revenues, of which $59 million would be derived from students and $27 million would be derived from increases in federal Basic Education Opportunity Grants (California Postsecondary Education Commission, 1979b). If tuition were charged on the basis of a percentage of the cost of instruction, even with the percentage set lower at the community colleges than at the universities, the results were anticipated to be more dramatic, with more of an impact on low-income students attending community colleges. While it was difficult to assess the impact of such changes on programs, it was anticipated that the decline in students, combined with an increase in revenues, would result in higher levels of resources being available per student. It should be noted that an analysis of the net price to

students of community college attendance was not expected to change, in 1979-80, for students from families with incomes between $7,500 and $13,000 even if tuition were increased by $250, due to the impact of federal student financial aid. Some additional state student aid would be necessary to guarantee such a hold-harmless position for students from families with less than $7,500 annual income (Nelson, S., 1979).

Two important points have been made in discussing the impact of tuition on college going behavior. First, the costs of college attendance exceed the cost of tuition and the ratio of the other costs to tuition is typically higher for students attending community colleges compared to students attending other public sectors. Large changes in the tuition component of these costs may have a relatively small impact on total costs to the student and the decision to attend is probably made on the basis of total cost and not just tuition cost. Second, total cost can be significantly altered by the availability of student financial aid from state and federal governments or tuition waivers from institutions so that the net cost of attendance is far lower than the total cost of attendance. Improvements in student aid systems so that information is available and so that funds are provided before costs are incurred would help students recognize more clearly the net price of attendance (Leslie et al, 1975).

Characteristics of State Community College Finance Systems

As shown earlier, many students of community college finance have contributed studies of the systems by which states provide

support to community colleges. These studies have documented changes in the level of support, the relationships between revenue sources, the level of state control, and so on. Most recently taxonomies of state support systems have been created so that similarities in approach to community college finance can be examined and alternative approaches can be assessed.

In 1976, Wattenbarger and Starnes produced what, up to that point, was the most comprehensive description and comparison of community college finance systems (Wattenbarger and Starnes, 1976). They showed that four funding models were currently in use: negotiated budget, unit rate formula, minimum foundation and cost-based program funding. Twelve states used the negotiated budget approach under which no local funding was provided and no statutory formula was used to allocate state funds, although formulas may have been used to develop budget requests. Of those states, four had only one community college and in two the community colleges were part of the state university system. In fifteen states unit rate formula funding was used, with the state providing or guaranteeing a specific level of funding per unit of measure. Under most circumstances the states provided a fixed amount per student for various functional activities, in some cases up to some maximum level. In some cases states differentiated the fixed amount provided on the basis of level of instruction, type of college, type of program or number of students. Eight states used a minimum foundation approach, under which a level of funding was guaranteed per student and state aid was calculated by deducting from that amount local revenues

collected at a specific tax rate. This system is sensitive to the variations in property wealth available to community college districts. Unlike the use of this approach in elementary/secondary education, at the community college level states normally require a tuition level to be set and state support is provided after calculating expected local tax and tuition revenues. Most states do not limit tuition or tax effort to the prescribed levels so that equalization is not complete. Sixteen states used cost-based program funding under which state aid was based on detailed cost analyses of program or functions, instructional disciplines or other identified cost centers. While most states used actual historical costs and averages over all institutions, some factors were considered to reflect cost differentials caused by special characteristics. Normally, a differentiation is made between academic transfer and vocational/technical courses and up to 45 disciplines have been identified. Most states in which this approach is used require no local tax effort and none is made (Martorana and Wattenbarger, 1978).

Martorana and Wattenbarger evaluated these various approaches in the provision of state support to community colleges against several criteria, similar to some of those discussed earlier. They concluded that the cost-based funding approach was the most appropriate while the negotiated budget approach was the least appropriate. They determined that none of the approaches guaranteed a minimum level of quality. All methods other than the negotiated budget approach were viewed as promoting institutional

flexibility, fulfillment of the goals of community colleges, and sufficient local control. They noted however, that none of the approaches guaranteed an adequate level of support and they concluded that the level of funding was of greater importance than the method of funding (Martorana and Wattenbarger, 1978).

A survey of the states in 1979 sponsored by the National Council of State Directors of Community College and Junior Colleges provides additional information to understanding state community college finance systems (Tollefson et al, 1979). The survey confirmed the fact that, at least among 29 states responding, formula budgeting was the dominant approach, based on program cost variations. This approach, however, was only used as a rationale for generating total state appropriations. In only one state was it shown that the funds generated for specific components of the formula were required to be spent in those areas. It was also found that many states did not allocate funds to individual institutions but rather appropriated funds to a central state agency for allocation to them. Most states used the number of students as a primary determinant of total dollars received. While most states used the FTE student in this capacity, the definition of an FTE differed somewhat among the states. It was found that when enrollments are lower than projections most states recall the excess funds but in a number of states such funds are not recalled. When enrollments exceed projections it was found that the states did not provide supplemental funds to cover the additional expenditures. This procedure however was not examined in relation to state enrollment

caps so it is difficult to determine the cause of higher than expected enrollments.

Wattenbarger and Starnes' survey of 34 states showed that in 1975-76, state appropriations provided between 30 and 97 percent of all revenues to community colleges with such support being over 67 percent of all revenues in 16 of the 34 states. Local district revenues were only provided in 18 of the 34 states, generally providng between 20 and 40 percent of all revenues. Tuition and fees were provided in almost all states, generally providing around 20 percent of all revenues, with a maximum of 33 percent of all revenues. Federal funds and other gifts and contracts generally provided between 5 and 10 percent of all revenues but in several states a significant percentage of community colleges revenues were received from those sources. These figures do not include state or federal student aid.

Wattenbarger and Starnes also determined the methods used by states to fund capital outlay and debt service. They concluded that major differences between the states were related to the proportion of support provided. Most states provided all the funding for capital outlay while a small percentage provided no funds for capital outlay. In the remainder of states a fixed ratio of state/local funding was prescribed.

Community Service: A Special Problem of Community College Finance

The funding patterns described previously generally apply to current expenditures of community colleges, and within those expenditures to programs of academic transfer, vocational-technical education and adult education. A certain tension has developed in the last decade between community colleges and states as community colleges have expanded their roles in an attempt to better serve the community, as enrollment declines have begun to occur and institutions search for new clientele, as state support has constricted and as states have shown an interest in restricting the use of funds to specific populations or programs. One of the most difficult areas to define among community college offerings has been community service and states have been ambivalent about providing support for such activities.

Community service has long been accepted by community college educators as part of their mission. An attempt in 1960 to define community service was somewhat unsuccessful because, according to Keim, 800 community colleges were responding to 800 different communities. However, the following types of activities were being undertaken: use of community college facilities by community groups; assistance in organization of special seminars, forums and discussion groups; promotion of cultural and recreational activities; coordination of other community agencies

to deal with specific communty problems such as health and child care; and sponsorship of research or studies pertaining to local problems (Keim, 1976). Community colleges in California were able to fund such activities through the use of a premissive recreational tax authority. In most other states reliance on participant fees was the primary source of funding although in some states support was provided directly by the state (Evans, 1973).

Many states have recognized community service activities as legitimate offerings of community colleges but have refused to fund them; in 1967 Washington mandated community service courses but in 1971 the legislature required that such courses become self-supporting (Yarrington, 1976). Other states have responded in similar fashion by restricting the types of programs for which state support could be used or denying state support based upon the characteristics of students. By the same token states have provided special funds either for exemplary programs, which may be service oriented, or for students with special needs such as the low-income, elderly, handicapped, part-time or educationally disadvantaged (Brossman, 1975). There apparently are limits on the amount of funding that can be derived from fees, particularly when the participant believes that which is gained has social benefits and not just personal benefits. There are also limits on local taxes, to which community colleges are sensitive (Fischer, 1978).

A study of the funding of community service activities in California showed that while student fees and local district taxes

provided the majority of funds for such programs prior to 1978, there were differences among community college districts in their proportional reliance on those sources. On the basis of examining programs offered and funding received, it was recommended that the maximum community service tax should be levied, that fees should be established by individual community colleges, that fee waivers be made available to certain target populations determined locally, that federal aid and private support should be sought on a project by project basis, and that state aid should specifically not be sought due to the likelihood of state restrictions and the year to year variation in priorities, regulation and funding levels (Zoglin, 1977). Following the passage of Proposition 13 in California, which severely restricted the availability of local taxes, however, the state has examined alternative methods by which it could provide support for community service programs.

The loss of local support reduced community service offerings by about 50 percent although a loss of state support resulted in a shift of numerous noncredit courses from the instructional category to community service, where fees could be charged. Therefore, there was a net increase in community service courses of about 20 percent, despite the elimination of courses due to a loss of funding or low enrollment due to the imposition of fees. In order to recognize community service as an important contribution of community colleges, the state adopted principles designed to provide public funding for one half of the marginal cost of future changes in community service classes, including certain noncredit classes for which state funds were not provided.

Such state funds would be provided on an unrestricted basis and fees could be charged to make up the difference in the cost of providing any community service activities. One alternative funding system to distribute state aid included guaranteeing 90 percent of the prior year's public funding of community services although if such funds were not used to provide such services, they would be subtracted from state allocations in the following year. A second funding approach considered was to transform community services to a categorical program funded directly by the state (McIntyre, 1979).

Other approaches could be taken to the problem of financing community services. First, such services need to be carefully analyzed in terms of their function, the degree to which they are instructional and the extent to which they accomplish tasks that agencies other than community colleges are expected to achieve. For those services that are instructional, there is a need to evaluate whether the instruction serves the private interests of students, the local needs of community college districts, or the needs of the state. Funding for the first should come from fees, while funding for the third should come from the state. Funding for the second category should probably be derived from a combination of fees, local taxes, and state funds depending on the limitations in operation on each. For those noninstructional community services that actually achieve social functions for which other agencies are responsible, the appropriate agency should provide the funding. Community services are clearly a difficult area in community college finance and one which has not

received sufficient attention.

The Impact of Tax Limitations on State Community College Systems

Trends in the financing of community colleges were dramatically affected in 1979-79 after the passage of Proposition 13 in California. That state system, enrolling a quarter of all community colleges in the nation, had relied heavily on local property taxes as a source of revenue while remaining the only state prohibiting tuition for community college students. While local property taxation had been declining as a source of funds for community colleges around the nation, and state aid had been increasing as a source of revenue, nowhere had a change in funding pattern occurred so quickly as it did in California, where property taxes declined from 62 percent to 29 percent of all revenues (California Postsecondary Education Commission, 1979a). As one analyst has shown, the financial stability of postsecondary institutions is related to a number of indicators of revenue availability. The most volatile of revenues is local property taxes, which have a direct impact on the community colleges in some states but which have only an indirect impact on other public postsecondary institutions (Minter, 1979). In California, the property tax limitation resulted in a decline of two thirds of locally provided funds, which put the burden on the state to determine if state funds, tuition or some combination of the two, would be used to replace local funds or if community college programs would simply be reduced to match available resources. No other single event in the history of financing community colleges

has received so much attention.

The result of Proposition 13's passage was to shift much of the responsibility for funding from local districts to the state. In the first year of operation after the June 1978 vote, the state provided funds from surplus to replace most, but not all, of the local funds lost. Colleges that had not anticipated passage were forced to react before the state's response was made clear. In any case, total budgets were reduced below planned levels with the result that programs were affected. Studies of the budget reductions show that they were made across all programs and activities and were not simply directed toward a particular function. However, community service activities, evening and weekend classes, and summer programs were severely reduced, excess reserves were used up, and major expenditures for maintenance or compliance with federal regulations were deferred. The result was that roughly the same mix and level of services was preserved although accessibility and institutional autonomy were threatened, regardless of the size, locale, age or revenue pattern of the institution. Given expected increases in salaries and stability in enrollments, it was expected that community colleges would have to further reduce services or charge tuition (Jackson, 1979). A loss in flexibility, a hallmark of the California community college system, was expected given the magnitude of the proportion of support provided by the state, the liklihood of centralized collective bargaining and the fact that the availability of state funds would be tied to enrollments, which were expected to stabilize (Lombardi, 1979).

Studies undertaken by individual community college districts documented some variation in the pattern of reductions. In the Los Angeles Community College District, Proposition 13 caused a loss of 56 percent of the quarter of a billion dollars collected from property taxes. The state's provision of support resulted in a 15 percent reduction in anticipated revenues. Summer school was eliminated, affecting 37,000 students. Of 42 lines in the budget, 13 were cut from 20 to 50 percent while 9 were cut in excess of 50 percent. Auxiliary enterprises were made self-supporting. It was expected that, since traditional students were cheaper to serve than non-traditional students, the institutions would focus their attention on them as fiscally expedient (McCuen and Hoffland, 1978). All programs were evaluated in terms of their historical enrollment levels and their costs in relation to the state funding received. One area that received increased attention was financial aid services, which was augmented in an attempt to maintain enrollments and to prepare for the likely imposition of fees and, possibly, tuition (Koltai, 1978).

One concern in responding to Proposition 13 was to maintain, or improve, equity among students institutions and taxpayers. Equity has been shown to be particulary difficult to define with respect to higher education because of the intergenerational transfers of benefits (Nelson, 1979). However, even given some differences between community colleges and other sectors of the higher education community, Nelson has argued that equity can be evaluated by examining the incidence of the mix of state and local taxes and investigating the interdistrict variations and by

determining the enrollment response and the composition of enrollments in terms of income and age.

Having established these criteria, Nelson compared the pre-Proposition 13 world of community college finance with the 1978-79 situation state under the "bailout" and with the alternative of introducing tuition into the system. Under the state bailout, Nelson concludes that the shift from local property taxes to state taxes, including income and sales taxes, improved the equity of the cost side of the cost-benefit equation although the somewhat lower level of total support reduced the benefit side. While enrollments declined in 1978-79, compared to 1977-78, too little was known about shifts in income and age distribution to evaluate the equity implications. Nelson determined that had tuition been imposed, up to a level of about $250, the net effect on community college attendance would have been small on students from families with incomes less than $13,000 since the net impact of such tuition could have been offset by the availability of federal student financial aid, which would have cost less than the provision of state subsidies to all students. This shift in the benefits provided by the state, in conjunction with the positive tax equity implications, would have made a high tuition/student aid response to Proposition 13 a more equitable response than the bailout (Nelson, 1979).

Following a second year of bailout funding, both the Board of Governors of the California Community Colleges and the California Postsecondary Education Commission have adopted positions concerning the future method of allocating state support to the

community colleges. The Board of Governors has rejected tuition as a component of its plan. Both groups, however, have adopted state aid systems that provide for a rational distribution of available revenues among community colleges based on program costs, special characteristics of the institutions, including district wealth, characteristics of the students, and the principles of marginal cost pricing (California Postsecondary Education Commission, 1979 and Board of Governors, 1979).

Another large community college system that has been threatened by tax limitations is the one in Illinois. While severe limitations have not been passed a number of dramatic proposals have been aired and the impacts of at least one such proposal for community colleges have been analyzed. In Illinois state funds have provided about 40 percent of all community college revenues while local taxes have provided 35 percent of all revenues and tuition and fees have provided 20 percent of all revenues. With both state aid and tuition revenues being responsive to enrollments, and enrollments declining, any attempt to limit local revenues would have a severe impact on the total revenues available to community colleges. At least one tax limitation proposal has called for a limitation on the increases in local taxes to 50 percent of the increases in the Consumer Price Index for the previous year. If that provision had been in effect in 1972 community colleges would have received 6 percent less revenues each year, assuming that the decrease in taxes would have been prorated among all services fund by local property taxes. Given that FTE enrollments increased at an average of 13

percent during the period, either program breadth would have suffered or enrollment caps would have been required. Had the institutions chosen to fund needed revenues through tuition increases, such increases would have boosted tuition levels, in some instances, over the levels that existed at public four-year institutions. The loss of enrollments due to students choosing not to pursue higher education at all would have seriously affected accessibility; had some students chosen to attend other public institutions, the revenue losses to community colleges could have been severe. Had the limitation applied to state revenues also its impact would have been less severe since state expenditures increased only slightly in excess of the amounts specified by the limitation. However, any restriction on state revenues would have caused an increased competition for available funds and speculation is that community colleges would have had a difficult time competing against elementary/secondary schools or public four-year institutions (Doversberger and Hickrod, 1979).

In summary, the environment within which community colleges operate has changed significantly over the past few years and the complexity of community college financing has increased. Up until just a few years ago, the literature about community college finance was descriptive and persuasive, attempting to monitor the expansion of the community college movement and the approaches to its financing that were being taken by the states while seeking to convince first local districts and then states that more funds were needed. In the past decade the literature reflects a continuation of some of this activity but also new tendencies to

document the problems of finance systems, to refine criteria by which such systems could be judged, to propose and evaluate alternative approaches, and to examine willingly possibilities that not only were not considered earlier but which violated fundamental principles upon which the community college movement was based. It is apparent that no single model of community college finance has ever been accepted in the states and that even given similar circumstances, including declining enrollments and increased state control, the historical basis for current finance systems will continue to be a dominant force in the future.

V. SUMMARY AND CONCLUSIONS ABOUT FUTURE RESEARCH NEEDS

Although a review of the four subjects included in the literature review indicates substantial knowledge and progress of research in some areas, other areas are decidedly lacking in adequate information. Chapter I, reviewing the characteristics of community college students, showed that an obstacle to creating a profile of the community college student is defining the universe of students at community colleges. Put another way, it may be that there is no typical community college student. There are community college students who are of conventional collegiate age and who attend full-time for the purpose of transferring to a four-year institution or obtaining a two-year degree; there are older students and part-time students who also enroll in conventional programs but who are viewed differently because of their unconventional class schedules; there are those who attend for avocational or personal enrichment objectives and enroll in credit and noncredit courses; and there are those who attend on an irregular basis for community education and community services. Generating a profile of an "average" community college student may be meaningless because of the diversity of students attending community colleges. Nevertheless, an examination of even the most conventional group of community college students shows that they are on average less advantaged socioeconomically and educationally than students attending elsewhere. It is not known to what extent students enrolled in less conventional programs at community

colleges, especially noncredit and community education and community service programs, are disadvantaged, if at all, and what extraordinary educational needs they may have.

Chapter II examines the literature on educational needs and enrollment behavior. One of the unfortunate aspects of the large number of education needs assessment surveys that have been done by community colleges is that the value of the information obtained is as little as it is. While many of the surveys presumably sought to identify the demographic characteristics of students and prospective students, especially nontraditional students, and their educational needs, the results are limited in value due to the way the surveys were designed and to the limited analysis made of the survey data.

Another section of Chapter II discusses some of the problems of modeling enrollment behavior of the individual contemplating continuing his or her education at a community college, and it is clear that neither needs assessment surveys nor techniques of estimating enrollment demand is sufficiently developed to provide reliable projections of enrollment levels. The matrix of factors involving students, institutions, and the social, economic, and political environment is too complex to include in a wholistic model of enrollment behavior, but all the shortcomings of previous researches do not need to be addressed simultaneously. Important progress can be made among certain dimensions. For example, distinguishing between adults and youths or, more specifically, between those with adult responsibilities such as families and jobs and those without them is an important factor that directly

or indirectly should be included in an analysis of the factors affecting community college enrollment.

Another example of a necessary distinction that should be made is that of the level of commitment made by a student. Although a definition of commitment is not easily made, it should probably take into consideration type or purpose of the education program in which the student enrolls and the degree of recognition that the program carries both within the institution and to those outside the community college. That is, there is probably a difference in the demographic and educational characteristics and in the willingness to make financial and other sacrifices of time and effort of a person who enrolls in a noncredit or credit or community education or community service program that provides vocational skills or personal enrichment.

Chapter III examined the question of whether community colleges received their fair share of public student financial aid. Although the issue, by definition, can not be resolved because of inherent value judgments of what type and magnitude of sacrifice an individual should make to attend college, there are several standards that can be applied to measure comparability of aid distribution with other institutional sectors, and, given public policy objectives, the results do not reveal any large inequities among conventional students. However, more attention should be given to unconventional students who may or may not be treated fairly. At this time there is not enough known about them to make an assessment.

The last chapter examined the methods, problems, and

evaluative criteria for financing community colleges. The mission of community colleges is changing and will continue to change substantially in the 1980s, and those changes raise major policy issues. Should a greater division of labor among postsecondary institutions be encouraged so that institutions receive funds only to undertake those activities that they perform best among all institutions? Should financial incentives be provided to encourage more first-time students to enroll in public four-year institutions with excess capacity rather than continuing to expand community colleges? Does the stress on low tuition make sense given the availability of student financial aid? The reliance on credit hour or contact hour production as the key to funding public higher education may be an anachronism with a growing portion of community college instruction not given for credit and not given in the classroom. What financing alternatives are available? How these questions are answered will be of critical importance to community colleges, but it will also involve and affect other postsecondary educational institutions as well.

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